COMPENSATORY MITIGATION PLAN

IMPACTS TO WETLANDS, WOOD STORK FORAGING HABITAT, AND SNAIL KITE FORAGING, NESTING, AND PERCHING/ROOSTING HABITAT

SR 7 EXTENSION

Okeechobee Boulevard to Northlake Boulevard

FPID Nos.: 229664-3-32-01

Palm Beach County, Florida

NOVEMBER 2015

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1.0 INTRODUCTION

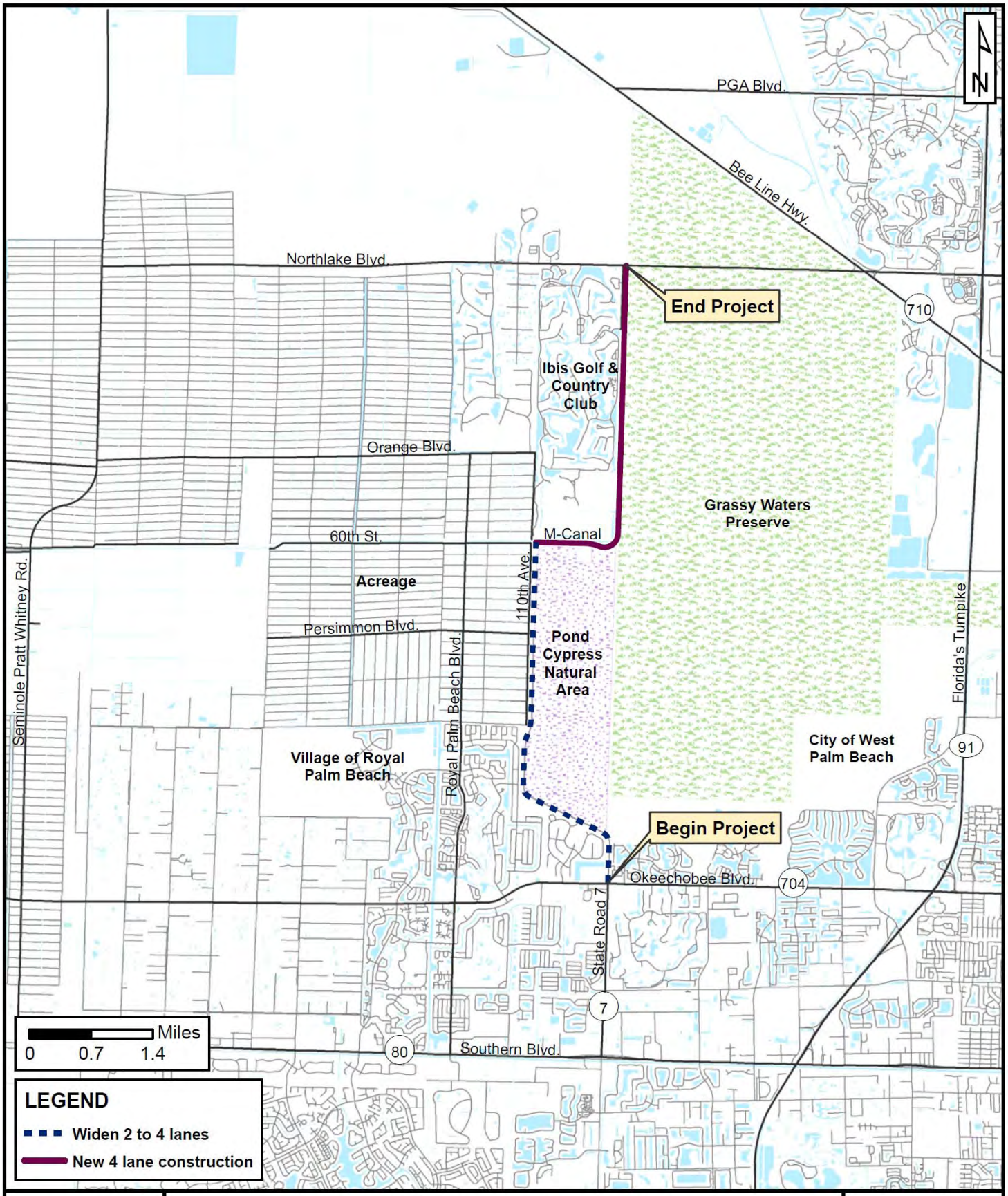
The Florida Department of Transportation (FDOT) is designing and permitting a corridor extension of State Road (SR) 7 in Palm Beach County (County), from Okeechobee Boulevard (Blvd.; SR 704) to Northlake Blvd., a distance of approximately 8.5 miles (Figure 1-1). The proposed project is located in the Village of Royal Palm Beach, unincorporated Palm Beach County, and the City of West Palm Beach. It will provide a north-south linkage between Okeechobee Blvd. and Northlake Blvd. west of Florida's Turnpike. The SR 7 extension project will widen the County's existing/permitted roadway between Okeechobee Blvd. and 60th Street North from two to four lanes and construct a new four-lane facility from 60th Street North to Northlake Blvd., including a bridge over the M-Canal. The FDOT and County will be co-permittees for this project.

This Mitigation Plan documents the elimination and reduction of impacts, and mitigation options for unavoidable impacts to wetlands, wood stork (*Mycteria americana*) foraging habitat, and Everglade snail kite (*Rostrhamus sociabilis*) nesting, foraging, and roosting/perching habitat associated with project construction. Mitigation of unavoidable direct, secondary and cumulative impacts is required for the issuance of the U.S. Army Corps of Engineers (USACE) permit, pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, and the South Florida Water Management District (SFWMD) Environmental Resource Permit (ERP).

1.1 PROJECT DESCRIPTION

The project is divided into two segments but will be permitted together in a single permit. The first segment (Segment 1; 229664-4) extends from approximately 1,800 feet north of Okeechobee Blvd. to the intersection at 60th Street North. The second segment (Segment 2; 229664-3) continues from the intersection at 60th Street North to Northlake Blvd. The proposed work in Segment 1 includes the widening of the County's existing facility from an undivided two-lane roadway to a divided, four-lane roadway. All wetland and stormwater permitting required for this widening have been previously completed by Palm Beach County (USACE Permit No. SAJ-2002-8273; SFWMD ERP No. 50-05422-P). The permitted wetland mitigation for Segment 1 included 544.33 acres of the northern portion of the Pond Cypress Natural Area known as Section 1, which was acquired in a 2006 land swap with Minto Development, Inc. when Minto transferred 544.33 acres of Section 1 to the County for inclusion in the natural area and 69 acres on the northern and western borders of Section 1 to the County for future road right-of-way (ROW). In 2008, 544.33 acres of Section 1 were set aside as preservation in order to provide mitigation for the section of the SR 7 extension that begins at Okeechobee Blvd. and ends at 60th Street North.

Segment 2 of this project (229664-3) consists of a new four-lane divided facility from 60th Street North to Northlake Blvd. The available ROW along the south bank of the M-Canal varies between 78 to 367 feet and the ROW north of the M-Canal varies between 200 to 320 feet. FDOT is proposing a four-lane divided facility that spans the western extent of the ROW. This west alignment proceeds along the south bank of the M-Canal as a new four-lane divided facility within County-owned ROW. At the point where the FDOT's



PROJECT LOCATION MAP

SR 7 Extension - Okeechobee Blvd to Northlake Blvd
Palm Beach County
FPID No. 229664-3-32-01

Figure 1-1

Rangeline ROW crosses over the M-Canal, the alignment turns north to cross over the M-Canal and continues along the west side of the existing ROW located between the Ibis Golf and Country Club and the Grassy Waters Preserve (also known as the Water Catchment Area). The roadway will be located adjacent to the Ibis Golf and Country Club. The drainage treatment swale will be located east of the roadway, between the road and the western boundary of the Grassy Waters Preserve. The proposed roadway alignment and typical sections are provided in this permit application package.

The proposed crossing over the M-Canal has been designed to be located within FDOT-owned ROW across the canal. To maintain the bridge within FDOT ROW, the roadway alignment leading to the bridge has to be shifted south into former Pond Cypress Natural Area land in order to incorporate a curve with a safe design speed. The curve along the alignment leading up to the bridge will be super-elevated at five (5) percent. In June 2015, a land exchange was preliminarily approved by the Palm Beach County Board of County Commissioners for the transfer of 0.668 acres of Pond Cypress Natural Area to County transportation ROW in exchange for 3.282 acres of former transportation ROW to be added into Pond Cypress Natural Area. Excerpts from the June 23, 2015 and August 18, 2015 County Commission meeting minutes preliminarily authorizing this land exchange is provided in Appendix A. Therefore, the M-Canal crossing and approach are completely within transportation ROW. The design does not encroach into any other ROWs and avoids the portion of the M-Canal owned by the City of West Palm Beach and protected under Special Laws of the Florida Legislature, Ch. 67-2169 ("the Special Act").

The portion of Segment 2 that is located south of the M-Canal is predominantly within County ROW. County ROW also encompasses the western 120 feet of the total 320-foot ROW located north of the M-Canal. FDOT owns the eastern 200 feet of ROW, known as the Rangeline, located north of the M-Canal.

1.2 PROPOSED WETLAND IMPACTS

It has been determined that there are no practicable alternatives to the proposed construction that would not impact wetlands, and that the proposed action includes all practicable measures to minimize unavoidable wetland impacts which may result from such action. In order to satisfy all mitigation requirements of Part IV Chapter 373, F.S. and 33 U.S.C. 1344, unavoidable wetland impacts will require mitigation to offset direct, secondary, and cumulative impacts.

1.2.1 Avoidance and Minimization Efforts conducted during the PD&E

The FDOT examined a variety of options to avoid and minimize impacts to wetlands, threatened and endangered species, and their habitat during this project's Project Development and Environment (PD&E) phase. Avoidance and minimization measures pertaining to wetlands include:

- Reduction in the median width from 42 feet down to 22 feet from 60th Street North to Northlake Blvd. (this is the minimum width allowed per FDOT design and safety standards);
- Reduction in the width of drainage treatment areas from 175 feet down to +/- 30 feet;
- Location of all stormwater outfalls to the west to existing stormwater systems, rather than to the wetlands located within the Pond Cypress Natural Area or Grassy Waters Preserve, to protect water quality in the natural areas;

- Elimination of a proposed pond site located within the FDOT Rangeline ROW, just south of the curve before the M-Canal crossing, due to the additional associated wetland impacts and resulting bifurcation of the Pond Cypress Natural Area and Grassy Waters Preserve;
- Removal of the shared used path on the east side of the roadway, replaced by sidewalk;
- Use of the existing SR 7 County road (between Northlake Blvd. and the entrance to the Ibis residential development) by placing the alignment as far west as possible;
- Reduction of secondary impacts to wetlands in Grassy Waters Preserve by placing the alignment as far west as possible;
- Incorporation of on-site mitigation through enhancement, restoration, and preservation of wetlands within the FDOT ROW north of the M-Canal that will further reduce roadway-related secondary impacts on Grassy Waters Preserve;
- Inclusion of wildlife fencing along the east and south sides of the corridor (north and south of the M-Canal, respectively) and wildlife crossings that will allow the safe passage between Grassy Waters and the Ibis Mitigation Area; and

Through these avoidance/minimization efforts, the following benefits have been realized:

- Approximately 50% reduction in the typical section footprint (saves approximately 170 feet of ROW adjacent to the Grassy Waters Preserve that will be designated as a conservation easement [the area within the ROW that would remain untouched is approximately 54.8 acres]);
- Approximately 51% reduction in impacts to total wetland impact acres;
- Greatest reduction in wetland impact to occur within the native-dominated higher quality marshes (approximately 87% impact reduction north of M-Canal) and hydric pine (approximately 92% impact reduction north of M-Canal);
- Reduced impact to preferred snail kite foraging habitat from nearly 10 acres to approximately 0.7 acres (93% reduction);
- Reduced median width to prevent widening to the inside, restricting the roadway to only four lanes in the future. This represents an approximate 36% decrease in direct wetland impacts, and therefore, eliminates impact to 40 acres of wetlands;
- Part of FDOT's mitigation plan is to enhance, restore, and preserve the remaining Rangeline ROW adjacent to the Grassy Waters Preserve, an area encompassing 54.8 acres, and apply a conservation easement for the unused portion of the ROW. This would prevent any future roadway widening to the outside;
- Reduced secondary impact acreage in Grassy Waters Preserve wetlands by approximately 58% as a result of incorporating on-site mitigation (through wetland restoration, enhancement, and preservation) on the easternmost approximate 170-feet of FDOT ROW north of the M-Canal;
- Minimized impacts to wildlife through sensitive structure design, use of appropriate fencing (that includes slats installed at the bottom of the fence to prevent small wildlife from passing through and reduce vehicular lighting impacts), heightened barrier wall on the M-Canal bridge and approach, and vegetated buffers to lessen the potential for vehicular strike impacts;
- Construction of wildlife crossings at the M-Canal and the Ibis Mitigation Area outfall structure that will allow wildlife connectivity between natural areas;

- Improvement in the quality of wildlife foraging, roosting, and nesting habitat in the 54.8 acre on-site mitigation area, discussed in further detail is Section 3.2; and
- Reduced unnecessary impact to wildlife through placement of the alignment as far west as possible within the ROW, closest to existing development.

Secondary impacts to wetlands will also be reduced to the greatest extent practicable. By shifting the alignment to the west, north of the M-Canal, the vast majority of secondary impacts to wetlands now occur within FDOT ROW that will be used for wetland creation and enhancement.

In addition, FDOT established the following design and construction conditions/commitments during the PD&E phase specifically related to avoiding and minimizing direct and indirect impact to snail kites:

- In order to minimize the potential for vehicular strikes during the operation phase, the roadway design includes the use of a vegetative buffer (tree/shrub combination) to force birds to fly up before flying over the roadway and dry roadside retention to minimize potential for snail kites foraging alongside the roadway.
- To minimize indirect effects on known snail kite foraging and nesting habitat, a stormwater design has be established that directs all stormwater to the west and away from adjacent wetlands, resulting in no hydrological changes to surrounding natural area wetlands.
- The stormwater system has been designed to capture and contain all contaminants that may be released from an accidental spill on the roadway, minimizing indirect water quality effects which could impact foraging success and apple snail populations.
- An on-site wetland mitigation area has been designed that lowers existing marsh elevations, where appropriate, to be more conducive to apple snail proliferation and controlling exotic and nuisance vegetation coverage. This minimizes indirect effects on snail kite foraging success and provides additional desirable foraging, nesting, and roosting/perching habitat.
- During construction, the potential for direct injury/mortality and snail kite nest disturbance will be minimized through use of the U.S. Fish and Wildlife Service (USFWS) guidelines and a project-specific snail kite management and protection plan (Appendix B). According to the current USFWS Snail Kite Management Guidelines, each time an active nest is discovered, two buffer zones are established: a no-entry buffer zone (500-foot radius) and a limited activity buffer zone (1,640-foot radius). Should nests be established within either of these buffer zones, the zones will be established and demarcated in the field, and proper protocols will be followed by construction personnel. The plan includes pre-construction nesting season surveys, nesting season surveys during construction, daily monitoring of nests as required by the guidelines, and implementation of a snail kite education plan for construction personnel.
- Project construction will not commence until the USFWS is granted third party rights over the Rangeline properties identified for conservation and mitigation from north of Okeechobee Blvd. to the M-Canal and from Northlake Blvd. to Jupiter Farms.

- FDOT will establish a management endowment fund of $1,579,720.00 to the Palm Beach County Division of Environmental Resources Management (ERM) to cover the costs associated with the long-term management of these Rangeline mitigation properties. The funds will be placed in an escrow account during construction.
- Provide a post-construction report summarizing any construction-related direct impacts to snail kite habitat.
- Fund a five-year post-construction monitoring program in order to determine the extent of any project-related indirect snail kite habitat impacts or impacts to kite foraging behavior and/or nesting success.
- Provide an on-site biological monitor to ensure that no snail kite impacts occur during construction, as well as ensure compliance with all permit conditions.

1.2.2 Wetland Impact Assessment Methodology

All proposed wetland impacts were assessed for compensatory mitigation requirements using Uniform Mitigation Assessment Method (UMAM) (Chapter 62-345, F.A.C). On October 13, 2011, USACE, SFWMD, and National Marine Fisheries Service (NMFS) approved all wetland habitat delineation polygons, acreages, and the direct impact UMAM scores presented below for all habitats within the ROW and 300-foot buffer. SFWMD approved the secondary impact UMAM scores on July 9, 2013. USACE reviewed the secondary impact UMAM scores on August 13, 2013 and stated that they seemed reasonable and in accordance with other similar secondary wetland impacts incurred in similar habitats. USACE also stated that these scores would be formally reviewed and approved during the permitting process. Meeting minutes for these agency coordination events are provided in Appendix C.

Wetland impacts were assessed within the Limits of Construction (LOC; direct impacts) and within a 300-foot buffer zone of the LOC (secondary impacts). In order to properly assess Functional Loss resulting from unavoidable wetland impacts, all wetlands within the project LOC and 300-foot buffer area were categorized into two (2) wetland areas: 1) those occurring south of the M-Canal adjacent to the Pond Cypress Natural Area; and 2) those occurring north of the M-Canal adjacent to Grassy Waters Preserve. Secondary impact assessments were divided into two (2) distance increments (as measured from the LOC): 1) a 0-50 feet increment; and 2) a 50-300 feet increment within the buffer. These two increment distances were established with guidance from SFWMD and USACE based on a preliminary assessment of Functional Loss in a 300-foot buffer zone surrounding the existing two-lane roadway in Segment 1. As noted above, SFWMD agreed to the increment categories. USACE stated that it was a reasonable approach but would not formally approve secondary impact UMAM scores until a permit application was submitted.

With the exception of a small portion of the FDOT Rangeline, the proposed roadway footprint that is located south of the M-Canal is within County ROW. Therefore, the majority of the secondary wetland impacts associated with this portion of the roadway corridor correspond to County-owned ROW. When the proposed roadway footprint is completely within FDOT ROW, the associated secondary wetland impacts are attributed to FDOT. For the majority of the proposed roadway north of the M-Canal, the proposed

typical section shows a 150-foot wide LOC, with the westernmost 120 feet of impact within the County ROW and the remaining 30 feet of impact within FDOT ROW. This equates to 80 percent of the typical section width within County ROW, and 20 percent in FDOT ROW. Secondary wetland impacts associated with this portion of the corridor are divided accordingly, so that 80 percent of the impacts within the 300-foot buffer are attributed to County ROW (0-240 feet from the LOC boundary) and 20 percent are attributed to FDOT ROW (240-300 feet from the LOC boundary). Both SFWMD and USACE approved of this methodology for assigning responsibility to secondary wetland impacts during a multi-agency meeting held on June 6, 2013.

1.2.3 Wetland/Surface Water Habitats Types

The proposed impacts occur in seven (7) different wetland/surface water habitat categories listed in Table 1-1; shown with their corresponding National Wetland Inventory (NWI) codes and Florida Land Use, Cover, and Forms Classification System (FLUCFCS) codes. The herbaceous marsh and forested wetland habitats are further broken down by 'A' and 'B' sub-classifications; 'A' represents wetlands with 0-25 percent exotic coverage, while 'B' are wetlands dominated by exotics. Brief descriptions of each of the seven (7) wetland/surface water habitat categories are as follows:

Freshwater Marsh - Native-Dominated (FLUCFCS 6410A)

This wetland habitat type occurs throughout the project corridor, both north and south of the M-Canal. The majority of the habitat is in good condition with a predominance of desirable wetland herbaceous vegetation and less than 10 percent coverage by nuisance and/or exotic species. A majority of the emergent marsh wetlands are inundated, ranging from small pockets to depths of two feet deep. Other systems that lacked standing water displayed other evidence of hydrology (e.g. stain lines, presence of muck soils, adventitious rooting). Hydrology of the wetlands appears appropriate, and in the case of marshes located within Grassy Waters preserve, is controlled. These marshes provide water quality enhancement and local groundwater recharge. Many of the emergent marsh habitat areas are continuous with adjacent marsh wetlands beyond the ROW. Typical wetland vegetation species include soft rush (*Juncus effusus*), sawgrass (*Cladium jamicense*), and maidencane (*Panicum hemitomon*), transitioning to pickerelweed (*Pontederia cordata*) in deeper water areas. Other observed species include beakrushes (*Rhynchospora microcarpa, R. colorata*), spikerushes (*Eleocharis* spp.), water hyssop (*Bacopa monnieri*), St. John's-wort (*Hypericum* sp.), and bogbuttons (*Lachnocaulon* spp.). While these marshes are dominated by ground cover species, some patches of shrubs do occur, particularly at the wetland edges, and consist primarily of Carolina willow (*Salix caroliniana*), myrsine (*Myrsine cubana*), and wax myrtle (*Myrica cerifera).* Decline in wetland quality generally occurs at the upland/wetland ecotone where invasive species tend to proliferate.

Freshwater Marsh - Exotic-Dominated (FLUCFCS 6410B)

A small proportion of the total freshwater marsh habitat occurring within the ROW is exotic-dominated (greater than 66 percent vegetative coverage). The exotic-dominated marshes occur in relatively small patches located north of the M-Canal. They occur in close proximity to the Ibis Mitigation Preserve outfall structure which flows into the Grassy Waters Preserve. Typical vegetation includes Peruvian primrose willow (*Ludwigia peruviana*), torpedograss (*Panicum repens*), cattail (*Typha* sp.), Brazilian pepper

Table 1-1. Direct Impact Acreages and Associated Functional Loss to Wetlands & Surface Waters

South of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	8.75	8	0	8	0	8	0	-0.80	7.00
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	N/A
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	N/A
Hydric Pine - Native Dominated	PFO3/4	6250A	10.74	8	0	8	0	9	0	-0.83	8.95
Hydric Pine - Exotic Dominated	PFO3	6250B	0.86	5	0	7	0	7	0	-0.63	0.54
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	N/A
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**20.35**								**16.49**

North of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	1.83	7	0	7	0	8	0	-0.73	1.34
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.91	7	0	6	0	5	0	-0.60	0.55
Mixed Shrubs - Exotic Dominated	PSS1	6172	14.43	5	0	5	0	4	0	-0.47	6.73
Hydric Pine - Native Dominated	PFO3/4	6250A	1.44	7	0	7	0	8	0	-0.73	1.06
Hydric Pine - Exotic Dominated	PFO3	6250B	12.31	7	0	6	0	4	0	-0.57	6.98
Vegetated Ditches	PABHx	5100	6.09	8	0	7	0	7	0	-0.73	4.47
Channelized Canals - Unvegetated	PUBHx	5100	0.26	-	-	-	-	-	-	-	N/A
Total			**37.27**							**-**	**21.13**

TOTAL DIRECT IMPACT FL = 37.62

A = habitats dominated by native vegetaton (less than 25% exotic coverage)
B = Habitats dominated by exotic, nuisance vegetation.

(*Schinus terebinthifolia*), and common reed (*Phragmites australis).*The abundance of exotic/nuisance species is likely the result of water quality as relatively nutrient-rich water flows out of the Ibis Preserve outfall.

Both freshwater marsh habitat types are contiguous to other large expanses of native wetland habitat outside of the ROW, and provide foraging opportunities for wading birds, snail kites, alligators, and other wetland-dependent wildlife. A wide variety of wetland-dependent birds have been observed foraging in these habitats, including snail kites. Due to their vegetation structure, these wetlands provide limited nesting and refuge opportunities for snail kites.

Mixed Shrubs - Exotic-Dominated (FLUCFCS 6172)

This habitat type occurs throughout a large portion of the project ROW north of the M-Canal. This wetland habitat is typically dominated by invasive/exotics such as Carolina willow and Brazilian pepper. Other vegetation types include melaleuca (*Melaleuca quinquenervia*), Australian pine (*Casaurina equisetifolia*), old world climbing fern (*Lygodium microphyllum*), as well as occasional native myrsine and wax myrtle. Nuisance/exotic vegetation coverage is typically greater than 66 percent. This wetland habitat exhibits poor quality, as reflected by and directly attributable to the dominance of nuisance/exotic Carolina willow and Brazilian pepper. All of these areas are bordered on at least one edge by a bermed roadway. Because of the adjacent berms, some areas show evidence of deposition from local erosion. Wetland hydrology appears appropriate, and in the case of shrub wetlands located within Grassy Waters preserve, is controlled. These habitats provide some water quality enhancement and local groundwater recharge function. Wildlife utilization of this habitat types is reduced by the vegetative community structure, however, there is opportunity for limited foraging, nesting, and roosting for wetland-dependent birds. No snail kites have been observed utilizing this habitat type.

Hydric Pine - Native-Dominated (FLUCFCS 6250A)

This habitat type occurs throughout the project corridor, but the majority is located north of the M-Canal. The majority of these areas are characterized by a low coverage of nuisance/exotic species (less than 10 percent). The canopy is dominated by slash pine (*Pinus elliottii*) with some dahoon holly (*Ilex cassine*) and cabbage palm (*Sabal palmetto*). Subcanopy and ground cover species include young canopy species, cocoplum (*Chrysobalanus icaco*), saw palmetto (*Serenoa repens*), fetterbush (*Lyonia lucida*), wax myrtle, myrsine, gallberry, maidencane, yellow-eyed grass (*Xyris* sp.), beakrushes, St. John's-wort, bloodroot (*Sanguinaria canadensis),* and wiregrass (Aristida stricta). All areas are contiguous with adjacent wetlands outside of the ROW. Hydrology appears appropriate, and in the case of areas located within Grassy Waters preserve, is controlled. The hydric pine wetlands provide water quality enhancement and local groundwater recharge; there is little to no evidence of erosion.

This habitat type provides foraging, nesting and refuge habitat for wading birds and other wetland-dependent species. A wide variety of wildlife has been observed in it, including turtles, small mammals, deer, and wading birds. Snail kites have been observed perching in these habitat areas.

Hydric Pine - Exotic-Dominated (FLUCFCS 6250B)

Some of the hydric pine habitat occurring within the ROW is exotic-dominated (greater than 66 percent vegetative canopy coverage); concentrated in an area just north of the M-Canal. Melaleuca and Australian pine dominate the canopy of this habitat type. Melaleuca is known to reduce and eventually eliminate opportunities for other species to grow. Vegetative species diversity is relatively low and only sparse patches of slash pine, coco plum, wax myrtle, sawgrass, and maidencane occur. This habitat type provides limited ecologic functionality, reduced foraging and nesting habitat for wildlife, and little to no water quality enhancement opportunity. No snail kites have been observed utilizing this habitat type.

Vegetated Ditches (FLUCFCS 5100)

This habitat type consists of long narrow man-made canals (ditches) with sparse emergent and floating vegetation. Coverage of rooted vegetation ranges from 25-75 percent. The habitat is inundated year round and typically relatively deep (3-5 ft water depth). It is bordered on either side by upland berms that have relatively greater nuisance and/or exotic species abundance than the surrounding natural areas. Due to the cover of rooted aquatic vegetation, these areas may provide some water quality enhancement. Typical wetland vegetation occurring in the ditch habitat type includes maidencane and giant leather fern *(Acrostichum danaeifolium*), transitioning to deeper water areas of spadderdock (*Nuphar luteum*) and floating heart *(Nymphoides peltata*). Nuisance and/or exotic plants observed include water lettuce (*Pistia stratiotes*), torpedograss, and cattail.

The relatively dense nuisance species coverage on the surrounding berms limits wildlife utilization. This habitat type provides minimal nesting habitat, however a variety of wetland-dependent have been observed foraging in the ditches. No snail kites have been observed utilizing this habitat type.

Channelized Canals - Unvegetated (FLUCFCS 5100)

This habitat type consists of the M-Canal. It can be typically characterized as a channelized canal with maintained banks and sparse emergent or floating vegetation. Coverage by rooted and/or floating vegetation typically ranges from 0-10 percent and is dominated by nuisance and/or exotic species. It is inundated year round, relatively deep, and bordered on either side by an upland berm that experiences a moderate amount of disturbance and vehicle traffic. Water lettuce and spadderdock are the dominant vegetation types, however the majority of the habitat acreage is open water. The steep bank slope and lack of appropriate littoral shelf, in addition to regular maintenance (mowing), contribute to the lack of vegetative cover.

The water in this canal flows to the east, and is controlled at its eastern outfall into Grassy Waters Preserve. It is a Class I surface water in accordance with Chapter 62-302 of the Florida Administrative Code, and it provides conveyance to Grassy Waters Preserve, part of the potable water supply for the City of West Palm Beach. This surface water provides limited opportunity for nutrient uptake or groundwater recharge. Due to the steep side slopes and general lack of vegetative cover, this water body provides minimal wildlife habitat value. No snail kites have been observed utilizing this habitat type.

1.2.4 Direct Wetland/Surface Water Impacts

The proposed roadway design will result in approximately 57.6 acres of direct impacts to wetlands and surface waters. All of the proposed wetland and surface water impacts occur within existing transportation ROW. Figure 1-2 depicts the locations of all wetlands and surface waters within the LOC and 300-foot buffer.

Table 1-1 lists the total wetland and surface water acreage within the LOC south and north of the M-Canal, respectively, as well as the acreages and UMAM Functional Loss resulting from proposed direct impacts to each habitat type. Direct impact UMAM data sheets are provided in Appendix D.

Approximately 40.6 acres of direct wetland and surface water impacts occur on County ROW (both north and south of the M-Canal), and these impacts result in an estimated 27.3 units of UMAM Functional Loss. Table 1-2 lists the total wetland/surface water impacts and associated UMAM Functional Loss, by habitat type, within the County ROW.

Approximately 17.4 acres of direct wetland and surface water impacts occur on FDOT ROW, with an estimated 10.6 units of corresponding UMAM Functional Loss. Table 1-3 lists the total proposed wetland and surface water impacts and associated UMAM Functional Loss, by habitat type, within the FDOT ROW.

1.2.5 Secondary Wetland/Surface Water Impacts

Secondary wetland impacts associated with the proposed roadway design were calculated and are estimated to be 21.5 units of Functional Loss. Secondary impact UMAM data sheets are provided in Appendix D.

As shown in Table 1-4, approximately 98.5 acres of secondary wetland impact equating to an estimated 14.0 units of Functional Loss is attributed to the portion of the roadway being constructed on County-owned ROW. An additional 54.0 acres of secondary wetland impact equating to an estimated 7.4 units of Functional Loss is attributed to the portion of the roadway on FDOT ROW (Table 1-5).

1.3 PROPOSED WILDLIFE-RELATED IMPACTS

It has been determined that there are no practicable alternatives to the proposed construction that would not impact wetlands which serve as foraging, nesting, and roosting/perching habitat for snail kites and wood stork. The proposed design includes all practicable measures to minimize harm to threatened and endangered species and their habitat which may result from such action. In order to satisfy the compensatory mitigation recommendations proposed by the USFWS, all unavoidable impacts (direct, secondary, and cumulative) to snail kite foraging, nesting, and perching/ roosting habitat will be mitigated separate from the wetland mitigation. NMFS has previously determined that none of the habitats impacted by the project are considered Essential Fish Habitat (EFH). Numerous wildlife habitat impact avoidance and minimization activities were incorporated into the project's PD&E phase. These were listed in Section 1.2.1 of this document.

Potential impacts to general wildlife include direct loss of habitat, indirect effects to remaining habitat, changes in patterns of movement, possible vehicle strikes, increases in noise and nighttime light, and effects to food sources. The design plans incorporate wildlife impact avoidance and minimization measures, as described in further detail in Section 2.1. These measures include the incorporation of two

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LEGEND

- New 4-lane Construction in Existing ROW
- County Permitted Section
- Reduced Typical Limit of Construction
- Land Cover - Within 300-foot buffer of LOC
- Land Cover - Within Existing ROW

N

0 200 400 600 Feet

Data Source: Scheda Ecological Observed Wetlands & Surface Waters
Image Source: Jacobs Engineering

1210
8100
6250A
6410B
6250A
8100
M-Canal
5100
8100
8100
6250B
6410A
6250A
6410A
4110
6250A
4110
4110
6410A
4110
4110
6250A
6410A
264' County ROW
Pond Cypress
Natural Area

SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION 1"=200'**	Figure 1-2 Sheet 1 of 9

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SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION 1"=200'**	Figure 1-2 Sheet 2 of 9

G:\Projects and Proposals\000009_SR7\MXD\Fig1-2_detailedwetlands_withinROW_gda_2400_20150623.mxd

LEGEND

- New 4-lane Construction in Existing ROW
- County Permitted Section
- Reduced Typical Limit of Construction
- Land Cover - Within 300-foot buffer of LOC
- Land Cover - Within Existing ROW

N

0 200 400 600 Feet

Data Source: Scheda Ecological Observed Wetlands & Surface Waters
Image Source: Jacobs Engineering

Ibis Preserve

Pond Cyp
Natural A

SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION** **1"=200'**	Figure 1-2 Sheet 3 of 9

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LEGEND

- New 4-lane Construction in Existing ROW
- County Permitted Section
- Reduced Typical Limit of Construction
- Land Cover - Within 300-foot buffer of LOC
- Land Cover - Within Existing ROW

N

0 200 400 600 Feet

Data Source: Scheda Ecological Observed Wetlands & Surface Waters
Image Source: Jacobs Engineering

200' FDOT ROW

Water Cat
(Grassy Wa

Ibis
Preserve

SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION 1"=200'**	Figure 1-2 Sheet 4 of 9

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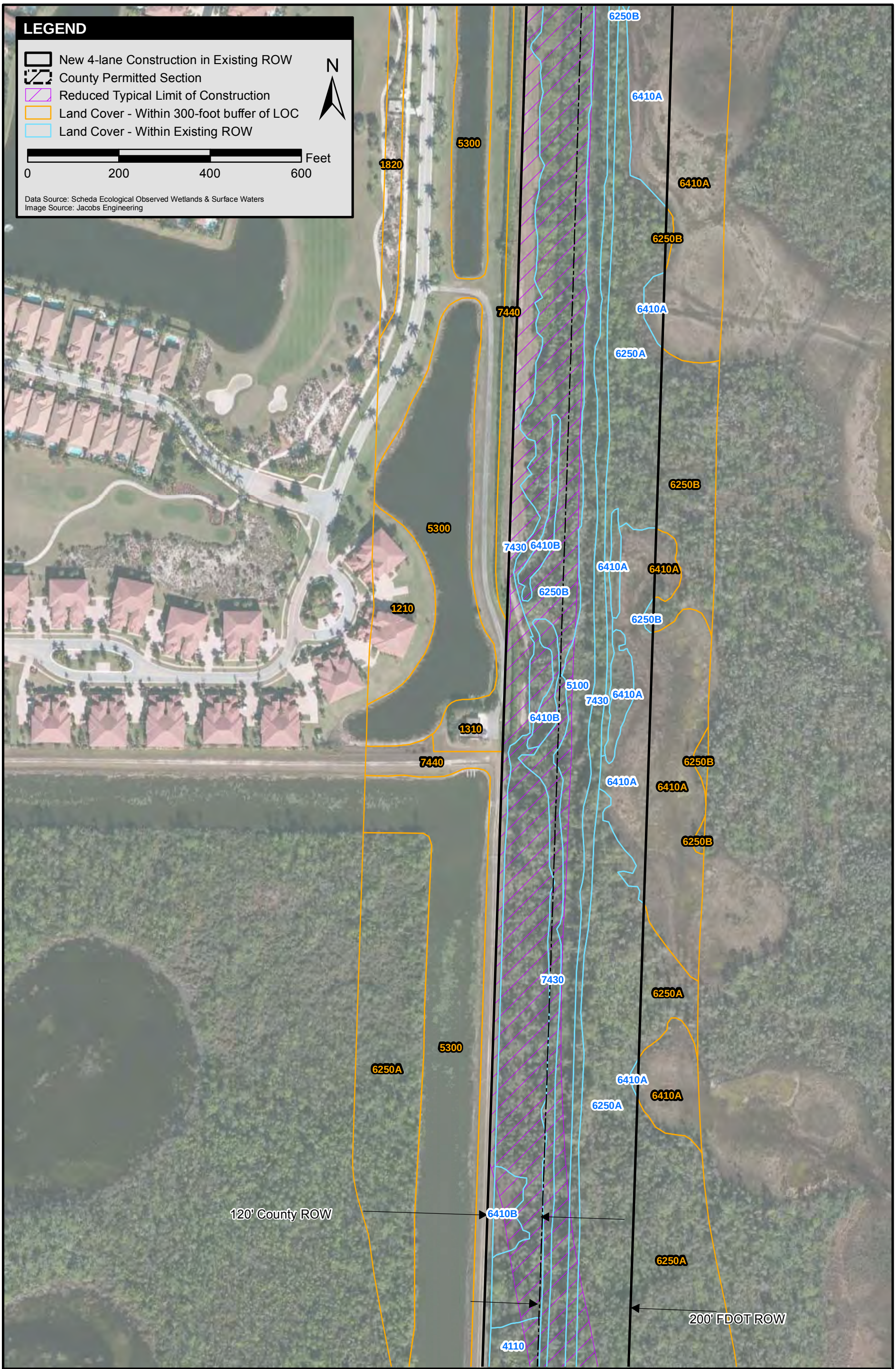

SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION** **1"=200'**	Figure 1-2 Sheet 5 of 9

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SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION 1"=200'**	Figure 1-2 Sheet 6 of 9

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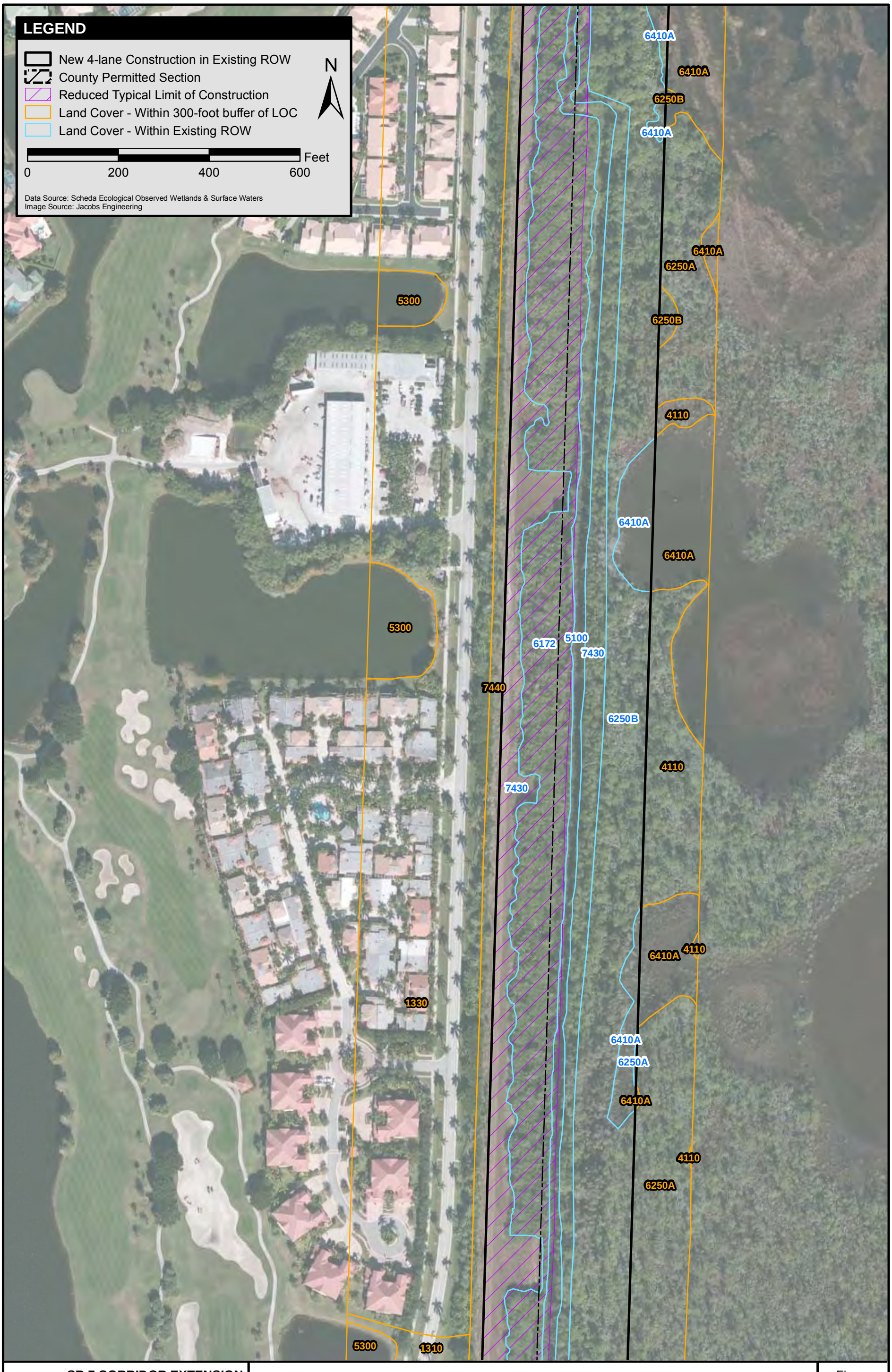

SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION 1"=200'**	Figure 1-2 Sheet 7 of 9

G:\Projects and Proposals\000009_SR7\MXD\Fig1-2_detailedwetlands_withinROW_gda_2400_20150623.mxd

LEGEND

- New 4-lane Construction in Existing ROW
- County Permitted Section
- Reduced Typical Limit of Construction
- Land Cover - Within 300-foot buffer of LOC
- Land Cover - Within Existing ROW

N

0 200 400 600 Feet

Data Source: Scheda Ecological Observed Wetlands & Surface Waters
Image Source: Jacobs Engineering

1820 8140 7430 7440 6410A 5300 6172 6410A 6410A 6172 6250B 1820 6172 4110 8100 6250B 5300 6410A 6250A 6172 7440 6410A 5100 4220 7430 6250A 4110 7430 4110 6410A 8140 7430 5300 6410A 7440 6172 6410A 6410A 120' County ROW 7430 1820 6250A 6250A 7430 7440 6250A 1820 6410A 200' FDOT ROW 6410A 5100 6250B 1330 6172

Centennial FDOT 1515 ★ 2015 SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION** **1"=200'**	Figure 1-2 Sheet 8 of 9

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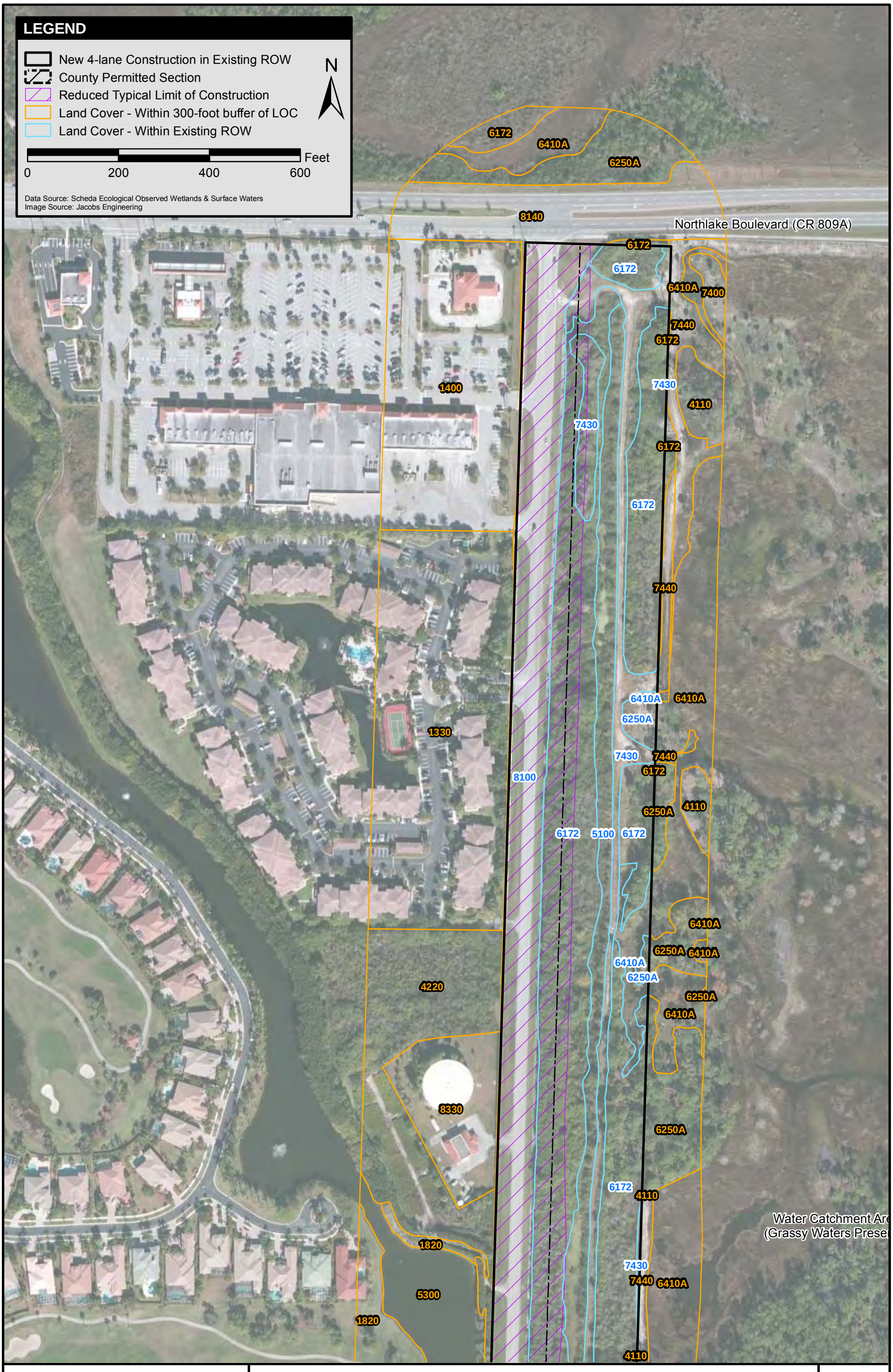


SR 7 CORRIDOR EXTENSION PD&E STUDY Palm Beach County, Florida FPID # 229664-2-22-01	**DETAILED WETLANDS AND SURFACE WATERS WITHIN EXISTING ROW AND 300-FOOT BUFFER OF LIMITS OF CONSTRUCTION** **1"=200'**	Figure 1-2 Sheet 9 of 9

Table 1-2. Approximate Direct Impact Acreages and Associated Functional Loss to Wetlands in County-Owned ROW

South of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	8.75	8	0	8	0	8	0	-0.80	7.00
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	N/A
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	N/A
Hydric Pine - Native Dominated	PFO3/4	6250A	10.74	8	0	8	0	9	0	-0.83	8.95
Hydric Pine - Exotic Dominated	PFO3	6250B	0.86	5	0	7	0	7	0	-0.63	0.54
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	N/A
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**20.35**								**16.49**

North of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	0.39	7	0	7	0	8	0	-0.73	0.29
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.25	7	0	6	0	5	0	-0.60	0.15
Mixed Shrubs - Exotic Dominated	PSS1	6172	10.19	5	0	5	0	4	0	-0.47	4.76
Hydric Pine - Native Dominated	PFO3/4	6250A	0.00	-	-	-	-	-	-	-	N/A
Hydric Pine - Exotic Dominated	PFO3	6250B	7.84	7	0	6	0	4	0	-0.57	4.44
Vegetated Ditches	PABHx	5100	1.59	8	0	7	0	7	0	-0.73	1.17
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**20.26**							**-**	**10.81**

TOTAL DIRECT IMPACT FL = 27.30

Table 1-3. Approximate Direct Impact Acreages and Associated Functional Loss to Wetlands in FDOT ROW

South of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	0.26	8	0	8	0	8	0	-0.80	0.21
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	N/A
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	N/A
Hydric Pine - Native Dominated	PFO3/4	6250A	0.13	8	0	8	0	9	0	-0.83	0.11
Hydric Pine - Exotic Dominated	PFO3	6250B	0.00	-	-	-	-	-	-	-	N/A
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	N/A
Channelized Canals - Unvegetated	PUBHx	5100	0.00	-	-	-	-	-	-	-	N/A
Total			**0.39**								**0.32**

North of the M-Canal

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	1.44	7	0	7	0	8	0	-0.73	1.06
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.66	7	0	6	0	5	0	-0.60	0.40
Mixed Shrubs - Exotic Dominated	PSS1	6172	4.24	5	0	5	0	4	0	-0.47	1.98
Hydric Pine - Native Dominated	PFO3/4	6250A	1.44	7	0	7	0	8	0	-0.73	1.06
Hydric Pine - Exotic Dominated	PFO3	6250B	4.47	7	0	6	0	4	0	-0.57	2.53
Vegetated Ditches	PABHx	5100	4.50	8	0	7	0	7	0	-0.73	3.30
Channelized Canals - Unvegetated	PUBHx	5100	0.26	-	-	-	-	-	-	-	N/A
Total			**17.01**							**-**	**10.33**

TOTAL DIRECT IMPACT FL =	**10.65**

Table 1-4. Secondary Wetland Impact Acreage and Functional Loss Associated with the Portion of Roadway on County ROW

North of M-Canal; Typical Section that includes roadway footprint in County & FDOT ROW

0-50 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	0.51	7	4	7	5	8	5	-0.27	0.14
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	3.77	5	2	5	3	4	2	-0.23	0.88
Hydric Pine - Native Dominated	PFO3/4	6250A	1.37	7	4	7	5	8	5	-0.27	0.37
Hydric Pine - Exotic Dominated	PFO3	6250B	0.08	7	4	6	4	4	2	-0.23	0.02
Vegetated Ditches	PABHx	5100	5.60	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**11.33**								**1.40**

50-240 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	22.53	7	5	7	6	8	6	-0.17	3.76
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	5.84	5	4	5	4	4	3	-0.10	0.58
Hydric Pine - Native Dominated	PFO3/4	6250A	21.91	8	7	7	6	8	7	-0.10	2.19
Hydric Pine - Exotic Dominated	PFO3	6250B	2.27	7	6	6	5	4	3	-0.10	0.23
Vegetated Ditches	PABHx	5100	1.22	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**53.77**								**6.76**

South of M-Canal

0-50 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	3.70	9	6	9	7	9	6	-0.27	0.99
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	5.99	9	6	9	7	9	6	-0.27	1.60
Hydric Pine - Exotic Dominated	PFO3	6250B	0.35	5	2	7	5	7	5	-0.23	0.08
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	-
Total			**10.04**								**2.67**

50-300 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	13.08	9	7	9	8	9	7	-0.17	2.18
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	10.31	9	8	9	8	9	8	-0.10	1.03
Hydric Pine - Exotic Dominated	PFO3	6250B	0.00	-	-	-	-	-	-	-	-
Vegetated Ditches	PABHx	5100	0.00	-	-	-	-	-	-	-	-
Total			**23.39**								**3.21**

N/A = The vegetated ditches will be filled and restored to forested wetland as part of the on-site mitigation plan. Separate UMAMs will be conducted for all habitat types proposed for enhancement/restoration.

TOTAL	**14.03**

Table 1-5. Secondary Wetland Impact Acreage and Functional Loss Associated with the Portion of Roadway on FDOT ROW

Secondary Impacts for portion of roadway completely within FDOT ROW, North of M-Canal

0-50 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	1.14	7	4	7	5	8	5	-0.27	0.30
Freshwater Marsh - Exotic Dominated	PEM1	6410B	1.29	7	4	6	4	5	3	-0.23	0.30
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	1.42	7	4	7	5	8	5	-0.27	0.38
Hydric Pine - Exotic Dominated	PFO3	6250B	2.56	7	4	6	4	4	2	-0.23	0.60
Vegetated Ditches	PABHx	5100	0.49	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**6.90**								**1.58**

50-300 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	7.73	7	5	7	6	8	6	-0.17	1.29
Freshwater Marsh - Exotic Dominated	PEM1	6410B	3.42	7	5	6	5	5	4	-0.13	0.46
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.00	-	-	-	-	-	-	-	-
Hydric Pine - Native Dominated	PFO3/4	6250A	9.29	8	7	7	6	8	7	-0.10	0.93
Hydric Pine - Exotic Dominated	PFO3	6250B	7.60	7	6	6	5	4	3	-0.10	0.76
Vegetated Ditches	PABHx	5100	1.62	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**29.66**								**3.44**

Typical Section that includes roadway footprint in County & FDOT ROW

240-300 ft

Wetland Type	NWI Classification	FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Functional Loss (FL)
				Current Condition	With Project	Current Condition	With Project	Current Condition	With Project		
Freshwater Marshes - Native Dominated	PEM1	6410A	9.55	7	5	7	6	8	6	-0.17	1.59
Freshwater Marsh - Exotic Dominated	PEM1	6410B	0.00	-	-	-	-	-	-	-	-
Mixed Shrubs - Exotic Dominated	PSS1	6172	0.22	5	4	5	4	4	3	-0.10	0.02
Hydric Pine - Native Dominated	PFO3/4	6250A	5.29	8	7	7	6	8	7	-0.10	0.53
Hydric Pine - Exotic Dominated	PFO3	6250B	2.12	7	6	6	5	4	3	-0.10	0.21
Vegetated Ditches	PABHx	5100	0.29	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Total			**17.47**								**2.35**

N/A = The vegetated ditches will be filled and restored to forested wetland as part of the on-site mitigation plan. Separate UMAMs will be conducted for all habitat types proposed for enhancement/restoration.

TOTAL	**7.37**

(2) wildlife crossings that will allow wildlife connectivity between habitats surrounding the project corridor. Currently, wildlife connectivity is relatively limited. The Ibis Mitigation Area is fenced (via chain link and electric fence on the east perimeter) impeding migration of terrestrial wildlife (such as medium to large mammals) and wetland species that commonly move between wetlands (such as alligators) outside of the Mitigation Area. The existing water management structure located just west of the corridor ROW provides the only M-Canal crossing option for land-based wildlife. Wildlife utilization within the project LOC is reduced due to the proliferation of exotic-dominated habitat that provides reduced-quality nesting and foraging habitat. In addition, upland berms inhibit aquatic wildlife from moving between the project corridor and adjacent wetlands.

Impacts to protected wildlife species are discussed in the following sections.

1.3.1 Wood Stork Suitable Foraging Habitat (SFH)

The project occurs within the USFWS-designated Core Foraging Areas (CFA) of four wood stork colonies (Figure 1-3), all of which are considered to be currently active. During general wildlife surveys, wood storks were observed foraging in wetlands and surface waters within the project area. Using the USFWS wood stork biomass foraging assessment methodology, it has been determined that an estimated 156.7 kilograms (kg) of long hydroperiod wetland foraging biomass will be impacted by the proposed roadway (Appendix E). For the analysis, all wetlands were considered habitat and were classified accordingly in the spreadsheet. The hydroperiod of wetlands located north of the M-Canal was considered Class 7, and wetland hydroperiod south of the M-Canal was considered Class 6. The presence of nuisance and exotic species was accounted for in the analysis according to the detailed wetland descriptions included in the impact UMAM sheets (Appendix D).

1.3.2 Snail Kite Nesting and Foraging Habitat

Snail kites have been previously documented over several years within natural areas located to the east of the proposed project. The USFWS Draft Snail Kite Management Guidelines (2006) outline Priority Management Areas for the snail kite; these areas are located to the east of the project ROW, with the closest Priority Management Area being approximately 4,605 feet to the east of the eastern FDOT rangeline ROW boundary (Figure 1-3). The proposed project results in no direct effects to any USFWS-designated snail kite critical habitat or Priority Habitat Areas.

Herbaceous marsh (FLUCFCS 6410) provides the preferred foraging habitat for the snail kite. Forested wetlands (FLUCFCS 6250) and wetland shrub (FLUCFCS 6172) provide nesting, roosting, and perching habitat with some foraging habitat (relatively lower quality compared to marshes). Upland forested habitat (FLUCFCS 4110) and the vegetated berms (FLUCFCS 7430) also provide marginal nesting, roosting, and perching habitat but no foraging habitat. Herbaceous marshes account for only 20% of the proposed roadway's direct wetland impact acreage.

During pre-application coordination efforts with USFWS, it was determined that all natural habitats within the proposed project's direct and secondary impact footprint shall be deemed "habitat suitable for snail kite nesting, foraging, and perching/roosting". Therefore, USFWS is requiring additional mitigation for snail kite habitat impacts, above and beyond what is statutorily required for compensatory wetland mitigation.

DUPUIS RESERVE

PINE GLADES NATURAL AREA

619220 PBC SWA

619315

Lox NC-4

Loxahatchee 1

Project Corridor – including on-site mitigation area
Rangeline - Northlake Blvd. to SR 710
Rangeline - PGA Blvd North
Rangeline - Okeechobee Blvd. to M-Canal
Proposed Mitigation Bank
Snail Kite Priority Management Zones
Snail Kite Consultation Area
Wood Stork Colony
Wood Stork Core Foraging Area

FIGURE 1-3

Rangeline Locations with Proposed Mitigation Banks, Snail Kite Habitats, and Wood Stork Core Foraging Areas Map

SR 7 EXTENSION

FPID No. 229664-3-32-01

0 5 10 15 Miles

N

Data Source:
- FDOT
- FDEP
- Scheda
- USFWS

Imagery Source:
- ESRI Base Map

Coordinate System:
NAD 1983 Florida State Plane East

Date: 02/25/2015 Rev. Date: n/a PM: JG GIS Analyst: GdA Map Document: mitigation_banks_snail_kite_woodstork_rangelines_B_gda_20150225.mxd Project Number: 2019 PDF Document: mitigation_banks_snail_kite_woodstork_rangelines_B_gda_20150225.pdf Plot Size: 11 x 17

1.3.3 Avoidance and Minimization of Snail Kite Nesting and Foraging Habitat

As stated in Section 1.2.1, the project's PD&E included numerous avoidance and minimization measures to reduce impacts to wetlands/snail kite habitat. To date, the following reductions have occurred through repeated refinement of the project concepts and designs as highlighted below:

- Impacts to optimal marsh habitat reduced by 93%;
- Impacts to optimal forested wetland reduced by 92%; and
- Impacts to higher quality, native species dominated 'A' habitats reduced by 90%.

Optimal versus suboptimal habitats for snail kite have been determined through literature review, field review, and six (6) years of project-related observations. For all wetland habitats, a 50% reduction in impacts has been achieved through implementation of various refinements to the design. In addition all impacts and potential affects to USFWS-designated Critical Habitat and Priority Habitat have been eliminated.

Direct Injury and Mortality

The proposed project does represent additional potential for direct injury and mortality, or disturbance of nests, during both the construction and operation phases. During construction, this potential will be minimized through use of the USFWS guidelines and a project-specific construction protection plan that will prevent any direct effect to snail kites and nests. According to the current USFWS Snail Kite Management Guidelines, each time an active nest is discovered, two buffer zones are established: a no-entry buffer zone (500-foot radius) and a limited activity buffer zone (1,640-foot radius). Should nests be established within either of these buffer zones, the zones will be established and demarcated in the field, and proper protocols will be followed by construction personnel. The plan includes pre-construction nesting season surveys, nesting season surveys during construction, daily biological monitoring of nests as required by the guidelines, and implementation of a snail kite education plan for construction personnel.

In order to minimize the potential for vehicular strikes during the operation phase, a tree vegetation buffer has been designed along the western edge of the mitigation area, to force birds to fly up before flying over the roadway. In addition, roadside swales have been designed as dry swales so there will be no attraction for snail kites to the roadway.

Indirect Effects to Adjacent Wetlands

One potential indirect effect to the snail kite is degradation of the wetlands adjacent to the direct impact area. For this project, wetland indirect impacts have been measured by UMAM Functional Loss and will be mitigated appropriately (further details provided in Section 3.5) In addition, there will be no change in hydrology in adjacent wetlands, as the design directs all stormwater to the west and away from wetlands.

Indirect Effects to Water Quality and Apple Snails

Another potential indirect effect to the snail kite could result from negative effects to water quality, which could affect both foraging success and the apple snail population. As previously described, there will be no change in hydrology in adjacent wetlands. In addition, the stormwater system has been designed to capture and contain all contaminants that may be released from an accidental spill on the roadway. Within the on-

site mitigation area, indirect effects will be further prevented by lowering marsh areas where appropriate to be more conducive to apple snails and controlling exotic and nuisance plants.

2.0 ADDITIONAL AVOIDANCE AND MINIMIZATION CONSIDERATIONS

Both Federal and State regulatory requirements mandate consideration of the elimination and reduction/avoidance and minimization of environmental impacts to the maximum practicable extent. Remaining unavoidable impacts must be mitigated. The FDOT has examined a variety of additional options to avoid and minimize impacts to wetlands and threatened and endangered species and their habitat during the project's design phase. The sections below include feasible design options that were considered, in addition to those committed to during the PD&E, and options that were determined to not be feasible for incorporation into the project.

2.1 FEASIBLE OPTIONS INCORPORATED DURING DESIGN

Additional wetland and wildlife impact avoidance and minimization measures incorporated into the project design include:

- Use of retained earth walls where feasible;
- Lowering the design elevation profile; and
- Incorporation of a minimal lighting scheme that will transition from the lights of local residences east into the natural area.

2.2 OPTIONS NOT PURSUED DUE TO LACK OF FEASIBILITY

Avoidance and minimization options that were not pursued involve the selection of alternative roadway corridors. Many project corridor alternatives were considered during this project's PD&E phase, however only the proposed corridor was deemed feasible. The selection of the proposed corridor is a result of many years of study and coordination with the environmental agencies and public. When the PD&E study began in 2005, the limits were confined to Northlake Blvd. The corridor selection process involved considerable discussion from all stakeholders involved. The corridor located to the west of Ibis (Corridor 1) would have resulted in significant impacts to the community, including the potential for 107 residential property impacts and relocations to Rustic Lakes and Ibis Golf & Country Club since the ROW along Corridor 1 would need to be acquired. Corridors further to the west, such as Coconut Blvd., would have resulted in even more community impacts with the potential for 192 residential property impacts and relocations, and the division (or splitting) of neighborhoods within the Acreage. Other corridor alternatives would have resulted in relatively greater wetland impacts, would have bisected natural areas, required additional connector roads through protected natural areas to provide proper system linkage, or required crossing the M-Canal within the City of West Palm Beach's ROW which is protected under Special Laws of the Florida Legislature, Ch. 67-2169.

Previous corridor options have included locating the roadway within the canal adjacent to 130th Avenue, including the use of a culvert to support the roadway. However, culverts are typically used for perpendicular

crossings for spans that range from 3 to 12 feet. In this case, the culvert would be located underneath and parallel to the roadway for a total distance of three miles. This distance is not practicable for a culvert. In this case, a bridge structure would be more appropriate. However, the cost for a three-mile bridge alone exceeds $184 million and is not feasible because it would sever access/connections to residential communities and reduce the functionality of local roads. Corridors further west, such as these, were previously evaluated in the past and discarded through the coordination process. The benefit of the proposed corridor is that it minimizes community impacts by avoiding ROW and relocation impacts and provides the best alternative for avoiding adverse effects to wetlands and the natural environment by wrapping around existing urban development. It also meets the project's purpose and need by enhancing the regional network given the proximity between the Florida's Turnpike and Seminole Pratt Whitney Road.

Previous studies, dating back to 1993, have been conducted that looked at broader areas as far west as Seminole Pratt Whitney Road and as far north as Martin County. Although these past studies were driven by the same purpose to improve system linkage, the corridors were refined and modified as the limits changed. Ultimately, the proposed design involves extending SR 7 to Northlake Blvd. as directed by the Palm Beach Metropolitan Planning Organization (MPO). In the past, corridors that went as far west as Seminole Pratt Whitney Road and through the Acreage were analyzed and discarded through agency workshops and input. Participants included federal and state permitting agencies, Palm Beach County staff, and members from 1000 Friends of Florida and the Audubon Society. The corridors that were further analyzed either went along the western edge of the Ibis community or along the eastern edge between the Ibis community and the Grassy Water Preserve.

Within the proposed roadway corridor, the roadway typical section has been minimized to the greatest extent possible to still meet FDOT design standards. The only other possible design options that could further minimize the project footprint and result in less wetland impacts would be to elevate the entire corridor, which would result in shading impacts but still allow wetland hydrologic function, or utilize MSE walls. Both of these options are extremely cost-prohibitive and could result in greater indirect effects on snail kite foraging, behavior, and nesting success.

3.0 MITIGATION SELECTED / PROPOSED MITIGATION

FDOT is committed to providing compensatory mitigation for unavoidable impacts to wetlands, wood stork foraging habitat, and snail kite nesting, foraging, and perching/roosting habitat. FDOT has evaluated various on- and off-site mitigation options that will provide the best mitigation solution in terms of the complex wetland habitat assemblages being proposed for impact. As shown in Table 3-1, fifteen (15) mitigation options were considered for this project. The primary factors for why nine of these potential mitigation sites were not incorporated into this project's proposed mitigation plan are listed in the table. The sections below describe this project's proposed mitigation strategy.

Table 3-1. Mitigation Options Summary

Mitigation Site	Project Description	Owner	Permit Nos.	Cumulative Impact Analysis Needed	Habitat Type	Potential Acreage Available	Potential Credits Available	USACE Credit Availability	Wood Stork Credit Availability	Snail Kite Habitat Suitability	Why Site is Not a Feasible Mitigation Option
Bluefield Ranch Mitigation Bank	Mitigation bank located in St. Lucie County. Bank is outside of service area and drainage basin. FDOT previously purchased 160 credits. Only 93.47 credits have been used, therefore 66.53 credits remain that are already paid for. Credit availability as of October 2012.	Private	SFWMD: 56-00002-M ACOE:SAJ-2000-02935	Yes	Herbaceous Marsh	2600	100	Yes	No; No certified wood stork credits.	Yes	Bank is located outside of the project's drainage basin and outside of the CFAs for three wood stork nesting colonies that affect the project. It was not pursued further due to the availability of other mitigation banking options closer to the project and type of mitigation required.
					Forested Wetlands		500				
Dupuis	Nearly 22,000 acre management area. Serves as a FDOT ROMA for wetland impacts. As of October 2012, approximately 567 credits are available that FDOT previously funded. Site located outside of the project's drainage basin. May be more suitable to offset impacts associated with smaller projects that FDOT and the Turnpike Enterprise may have in the Work Program.	SFWMD	Agreement between SFWMD and FDOT; ACOE permit pending	May be Required (outside drainage basin)	Herbaceous	Unknown	501	Yes	Yes	Limited	N/A. Site is proposed to mitigate for the project"s unavoidable wetland impacts.
					Forested Wetlands	Unknown	66				
Gentle Ben Ranch	Privately-owned parcels located on the southeast corner of PGA Blvd and SR 710. Mitigation through restoration of pasture land and borrow pits is possible. Site provides regional value given its location in relation to other protected areas. Using this site may result in FDOT being the property owner which goes against FDOT's core missions. FDOT would have to purchase land and arrange transfer of ownership to another entity (likely Palm Beach County).	Private	Not Yet Permitted	No	Herbaceous Marsh	337[b]	Unknown	N/A	N/A	Yes	The property owner did not respond to any of FDOT's attempts to make contact; therefore, site was not further considered.
					Forested Wetlands		Unknown				
Grassy Waters Preserve	The City of West Palm Beach has previously conducted wetland restoration for mitigation credit in Grassy Waters. Additional restoration/enhancement is planned. The amount or acreage needing restoration/enhancement is currently unknown. Landowner currently seems unwilling to use site as mitigation for SR 7.	City of West Palm Beach	TBD	No	Herbaceous Marsh	Unknown	Unknown	TBD	TBD	Yes	The Grassy Waters Preserve is owned and operated by the City of West Palm Beach, which is currently opposing the SR 7 Extension project. The Grassy Waters Preserve managers have expressed no interest in using this site for mitigation for this project.
					Forested Wetlands	Unknown	Unknown				
Loxahatchee Mitigation Bank	Mitigation bank located in Palm Beach County. Bank is within service area but outside of drainage basin. Bank may not have same assemblage of habitats as those being impacted. Mitigation credit availability listed as of October 2012.	SFWMD (operated by Tetra Tech)	FDEP: 140969-001 ACOE:SAJ-1997-07816	No	Herbaceous Marsh	Unknown	58	Yes	Yes	Yes	Bank does not offer hydric pine habitat credits. It offers limited deep, open water herbaceous marsh habitat suitable to offset impacts to snail kite foraging habitat. SFWMD has expressed concern that the bank does not provide the habitat complexity or similar assemblages of wetland habitats as those being impacted.
					Forested Wetlands	Unknown	24				
Mecca Slough	Prevously permitted 353-acre wetland restoration site. The parcel contains approximately 2,000 acres of former agriculture land that can be restored to wetland.The permitted site plan can be modified to suit mitigation needs for SR 7 and may afford an opportunity for future FDOT projects.	Palm Beach County	SFWMD: 50-08699-P ACOE: SAJ-2004-2859	No	Herbaceous Marsh	154	51.3	Yes	No; Pemitted prior to wood stork rule.	Yes; Could be redesigned to create more	SFWMD recently purchased the site and has expressed no interest in using the site as mitigation for this project.
					Forested Wetlands	78*	26.0				
Parcel 20.04	Previously constructed wetland mitigation site owned by a private developer. Site is already built and functioning as a wetland; no lag time, no risk. Site directly abuts state-owned lands (Johnathan Dickinson State Park). The developer is looking for a sole-source buyer to purchase the portion of the site that is not needed as mitigation for previous impacts. Regulatory agencies are currently working on how to permit site bifurcation. Using this site may result in FDOT being the property owner which goes against FDOT's core missions. Donating the land to the State after purchase may be possible given its adjacency to state-owned lands.	Private	SFWMD: 43-01374-P ACOE: SAJ-2002-01929	No	Herbaceous Marsh	TBD	2[&]	Yes	No; Pemitted prior to wood stork rule.	Yes	The private developer recently found another buyer/user for the available credits. Therefore, the site was no longer considered.
					Forested Wetlands	TBD	18[&]				
Pine Glades PROMA (West and North sites)	Previously constructed pine flatwood and wetland restoration area. As permitted, credits are to only be used for Palm Beach County projects. It is likely the site can only be used for impacts on Palm Beach County right-of-way. Credit availabity listed as of February 2015.	Palm Beach County	SFWMD: 50-08187-P / 50-08231-P USACE: SAJ-2007-04122 / SAJ-2011-02278	No	Herbaceous Marsh	2487	44.1	Yes	Yes; Approx 134.53 kg of wood stork short hydroperiod credits and 1140.25 kg of long hydroperiod credits.	Yes	N/A. Site is proposed to mitigate for the project"s unavoidable wetland impacts.
					Forested Wetlands		52.1				
Rangeline (M-Canal to Northlake Blvd)	Preservation/enhancement of wetlands and restoration of uplands and ditches in the FDOT right-of-way directly adjacent to Grassy Waters Preserve that will not be impacted by the proposed roadway construction. A conservation easement can be placed over the area to ensure wetland persistence in perpetuity.	FDOT	Not Yet Permitted	No	Herbaceous Marsh	15.8a	1.3	TBD	TBD	Yes	N/A. Site is proposed to mitigate for the project"s unavoidable wetland impacts.
					Forested Wetlands	37.2a	3.4				
Rangeline (Okeechobee Blvd to M-Canal)	Preservation of existing wetland habitat within the Rangeline. Enhancement activities conducted by the County in recent years has enhanced the overall wetland quality and landscape support to the surrounding wetland preserve areas.	FDOT	N/A	No	Herbaceous Marsh	40.2	1.2	TBD	TBD	Yes	N/A. Site is proposed to mitigate for the project"s unavoidable impacts to snail kite habitat.
					Forested Wetlands	44.3	9.9				
Rangeline (Northlake Blvd to SR 710l)	Preservation of existing wetland habitat within the Rangeline. Enhancement activities conducted by the County in recent years has enhanced the overall wetland quality and landscape support to the surrounding wetland preserve areas. Conservation will prevent construction of future roadway.	FDOT	N/A	No	Herbaceous Marsh	20	TBD	TBD	TBD	Yes	N/A. Site is proposed to mitigate for the project"s unavoidable impacts to snail kite habitat.
					Forested Wetlands	24	TBD				
Rangeline (PGA Blvd to Jupiter Farms)	Transfer of land area to Palm Beach County for Preservation and Enhancement. Based on review of recent aerials, exotic control activites have routinely occured within the Rangeline. Therefore, the opportunity for additional enhancement/restoration activities is limited.	FDOT	N/A	No	Herbaceous Marsh	28.8	0.0	TBD	TBD	Yes	N/A. Site is proposed to mitigate for the project"s unavoidable impacts to snail kite habitat.
					Forested Wetlands	47.6	5.2				
R.G. Reserve Mitigation Bank	Mitigation bank located in Martin County. Bank is outside of service area and drainage basin. Credit availability as of October 2012.	Private	SFWMD: 43-00001-M No ACOE Permit	Yes	Herbaceous Marsh	640	20	No	TBD	Yes	Bank not permitted through the USACE. It does not offer approved wood stork foraging habitat credits. The project is outside the bank's service area and the bank is outside of the project drainage basins. Regulatory compliance issues. Bank does not have a mitigation banking instrument which would allow it to sell federal mitigation credits.
					Forested Wetlands		10				
Treasure Coast Mitigation Bank	Mitigation bank located in St. Lucie County. Bank is outside of service area and drainage basin. Credit availability listed as of October 2012. SFWMD recently froze the issuance of credits due to permit compliance issues.	Private	SFWMD: 56-00004-M ACOE: SAJ-2001-04445	Yes	Herbaceous Marsh	2500	86	Yes	Yes	Yes	Bank is outside the project's drainage basin and outside of the CFAs of the three wood stork nesting colonies that affect the project. It was not pursued further due to the availability of alternative mitigation bank options closer to the project and type of mitigation required.
					Forested Wetlands						
Vavrus Ranch	Large parcels that may be available for purchase. Restoration of pastureland or enhancement of existing wetlands are possible mitigation options. Utilization of northern portion may offer the most ecological benefit. All wetland jurisdictional lines on the property were previously established by USACE.	Private	Not Yet Permitted	No	Herbaceous Marsh	2100**	667.0	N/A	N/A	Yes	Site was recently sold to private developers who currently have no interest in developing the property as a mitigation bank or allowing FDOT to use it for mitigation for this project.
					Wetland Restoration	2000[#]	280.0				

D = Direct impact acreage and functional loss includes impacts to the vegetated linear ditches (FLUCFCS 5100, NWI: PABHx)
S = Estimated functional loss from secondary impacts is based on worst-case typical section impacts up to 300 ft from limit of construction line.
* = The 78 acres of forested wetland acres available equals the permitted 28 acres of forest wetland restoration and the permitted 50-acre open water refugia that could be modified into a forested wetland restoration.
** = Existing wetland acreage available in the Vavrus-owned parcels per SFWMD FLUCCs data. The acreage will need to be ground-truthed for accuracy.
# = Restoration acreage denotes the existing pasture land that is located in a corridor that could connect the JW Corbitt Management Area to the Loxahatchee Slough through Mecca Flowway.
& = Approximate number of credits available. The exact number of credits for sale is currently being negotiated with the regulatory agencies.
a = Assumes that the existing ditches and uplands within the Rangeline will be restored to forested wetland habitat.
b = Parcel encompasses 337 acres. Approximately 77 acres are existing marsh, 100 acres existing forested wetlands that may have potential for enhancement. Approximately 25 acres of surface water ponds and 43 acres of upland pasture could be restored to wetland.

3.1 OBJECTIVES

The SR 7 Extension project will result in unavoidable impacts to waters of the U.S., USACE- and SFWMD-jurisdictional wetlands, and USFWS-jurisdictional wood stork core foraging and snail kite foraging, nesting, and roosting/perching habitats. The project is within the Lake Worth Lagoon watershed and Eastern Palm Beach County Cumulative Impact Basin. It is in the C-51 West (impacts south of the M-Canal) and West Palm Beach Water (impacts north of the M-Canal) drainage sub-basins (Figure 3-1).

According to the Surface Water Improvement and Management (SWIM) Plan for the Lake Worth Lagoon watershed, which was developed by the Florida Department of Environmental Protection (FDEP) and Palm Beach County, the lagoon often experiences excess runoff in the wet season and fewer freshwater discharges during the dry season. The lagoon has been subjected to extreme salinity fluctuations as a result of wetland loss, lowered water tables, increased watershed imperviousness and redirected historical runoff in the watershed. In addition, the periodic flushing of nutrients, suspended solids and residential/agricultural pollutants via the SFWMD C-51 Canal and Lake Worth Drainage District canals has deteriorated water quality in the lagoon. The proposed stormwater management facilities associated with the SR 7 Extension project are expected to improve water quality by providing enhanced treatment of roadway and urban runoff where such treatment is currently either limited or non-existent. In addition, the proposed on-site wetland mitigation efforts and wetland preservation within the Rangelines (discussed in further detail in the following sections) will provide additional water quality and storage benefits.

Although the watershed boundaries shown in Figure 3-1 do not depict this, surface waters in the Grassy Waters Preserve flow into the M-Canal and to the east and also north into the Loxahatchee River watershed. A bridge project was recently completed along Northlake Blvd. to the east of this project's northern limit that restored hydrologic connectivity between Grassy Waters Preserve wetlands located north and south of Northlake Blvd. Wetlands to the north of Northlake Blvd. are the headwaters of the Loxahatchee River.

Wetland habitat descriptions and impact acreages have been previously discussed in Sections 1.2 and 1.3 of this document. As co-permittees for this project, FDOT and Palm Beach County are required to provide compensatory mitigation for these wetland impacts. The compensatory mitigation being proposed to offset the 57.6 acres of direct wetland and surface water impacts and the associated secondary impacts will be provided through the following:

1) on-site wetland mitigation through wetland creation, restoration, and enhancement in 54.8 acres of on-site ROW;
2) allocation of wetland functional units at Palm Beach County's Pine Glades Permittee-Responsible Off-Site Mitigation Area (PROMA); and
3) allocation of acre-credits at SFWMD's Dupuis Reserve PROMA.

Table 3-2 summarizes the proposed wetland mitigation plan for the SR 7 Extension Project. Additional details regarding the determination of impact Functional Loss are provided later in Section 3.5.

NORTH ST. LUCIE
NORTH ST. LUCIE
ST. LUCIE ESTUARY
IRL MIDDLE COASTAL
C-23
S191
BASIN 4
BASIN 5
BASIN 6
IRL SOUTH COASTAL
S-153
ST. LUCIE ESTUARY
SOUTH ST. LUCIE
NORTH COASTAL LOXAHATCHEE
NORTH LOXAHATCHEE ESTUARY
C-44
KITCHING CREEK
LOXAHATCHEE ESTUARY
THE GROVE
BASIN 8
CYPRESS/PAL MAR
DUPUIS RESERVE
LOXAHATCHEE RIVER
PINE GLADES NATURAL AREA
WILD & SCENIC/ JUPITER FARM
SOUTH LOXAHATCHEE ESTUARY
SOUTH COASTAL LOXAHATCHEE
C-18/CORBETT
L-8
LAKE WORTH LAGOON
W.P.B. WATER
C-17
EAST SHORE
S-5A
LAKE WORTH LAGOON
S-2
EVERGLADES AGRICULTURAL AREA
C-51 WEST
C-51 EAST
S-6
ACME-B
LORIDA BAY
NSERVATION AREA 1
C-16
BROWARD-PALM BEACH COAST
C-15

- Project Corridor – including on-site mitigation area
- Rangeline - Northlake Blvd. to SR 710
- Rangeline - PGA Blvd North
- Rangeline - Okeechobee Blvd. to M-Canal
- Proposed Mitigation Bank
- SFWMD Watershed
- SFWMD Drainage Basin

FIGURE 3-1

Rangeline Locations with Proposed Mitigation Banks, Watersheds, and Drainage Basins Map

SR 7 EXTENSION

FPID No. 229664-3-32-01

0 5 10 15 Miles

N

Data Source:
- FDOT
- FDEP
- Scheda
- SFWMD

Imagery Source:
- ESRI Base Map

Coordinate System: NAD 1983 Florida State Plane East

Date: 02/25/2015 Rev. Date: n/a PM: JG GIS Analyst: GdA Map Document: mitigation_banks_watersheds_drainage_basins_rangelines_B_gda_20150226.pdf Plot Size: 11 x 17
Project Number: 2019 PDF Document: mitigation_banks_watersheds_drainage_basins_rangelines_B_gda_20150226.mxd Project Number:

Table 3-2. Proposed Wetland Mitigation Plan Summary

Habitat Location	Impact Type	Approx. Impact (Ac)	UMAM FL	Proposed Mitigation Location	Assessment Method / Ratio	Wetland 'Units' Available	Mitigation 'Units' Needed (Impact UMAM FL)	'Units' to be Deducted
Herbaceous - FLUCFCS 6410 & 5100								
County ROW	Direct	10.98	8.60	Pine Glades PROMA	UMAM (1:1)	44.10	8.60	8.60
FDOT ROW (FLUCFCS 6410A)	Direct	1.70	1.27	On-Site Mitigation Area	UMAM (1:1)	1.27	1.27	1.27
FDOT ROW (FLUCFCS 6410B & 5100)	Direct	5.16	3.70	Dupuis PROMA	Acreage-Based Mitigation Ratios (4:1)	501.00	5.16 x 4 = 20.64	20.64
County-Attributed Buffer (0'-240' N typical, 0'-300' S)	Secondary	46.64	7.06	Pine Glades PROMA	UMAM (1:1)	44.10	7.06	7.06
FDOT-Attributed Buffer (0-50 ft)	Secondary	2.43	0.61	Dupuis PROMA	Acreage-Based Mitigation Ratios (0.5:1)	501.00	2.43 x 0.5 = 1.22	1.22
FDOT-Attributed Buffer (50-300 ft / 240-300 ft)	Secondary	20.70	3.34	Dupuis PROMA	Acreage-Based Mitigation Ratios (0.25:1)	501.00	20.70 x 0.25 = 5.18	5.18
Forested - FLUCFCS 6172 & 6250								
County ROW	Direct	29.63	18.69	Pine Glades PROMA	UMAM (1:1)	52.10	18.69	18.69
FDOT ROW	Direct	10.28	5.68	Dupuis PROMA	Acreage-Based Mitigation Ratios (4:1)	66.00	10.28 x 4 = 41.12	41.12
County-Attributed Buffer (0'-240' N typical, 0'-300' S)	Secondary	51.89	6.98	Pine Glades PROMA	UMAM (1:1)	52.10	6.98	6.98
FDOT-Attributed Buffer (0-50 ft)	Secondary	3.98	0.98	On-Site Mitigation Area	UMAM (1:1)	3.44	0.98	0.98
FDOT-Attributed Buffer (50-300 ft / 240-300 ft)	Secondary	24.52	2.44	On-Site Mitigation Area	UMAM (1:1)	3.44	2.44	2.44

Notes:

1. County ROW includes the wetland habitats in the Tower Parcel.
2. Acreage ratio of 0.5:1 for secondary impacts in the 0-50' buffer
3. Acreage ratio of 0.25:1 for secondary impacts in the 50-300' buffer

WETLAND 'UNIT' DEDUCTION SUMMARY

Mitigation Location	Herbaceous	Forested	Total Deduction
Dupuis PROMA	27.04	41.12	68.16
Pine Glades PROMA	15.66	25.67	41.33
On-Site Mitigation	1.27	3.42	4.69
		TOTAL	**114.18**

The proposed impacts to 156.7 kg of long hydroperiod wetland foraging biomass for wood storks will be mitigated through the allocation of available biomass credits at the Pine Glades PROMA. The proposed impacts to 51.1 acres of snail kite foraging, nesting, and perching/roosting habitat will be mitigated through a multi-faceted approach that includes compensation for direct and indirect habitat impacts, wetland preservation and conservation, an endowment to ensure management of preserved lands, and nest/bird protection during construction. The plan includes preservation of native wetland and upland habitats within three sections of the Rangeline (Okeechobee Blvd. to M-Canal, Northlake Blvd. to SR 710, and SR 710 to Jupiter Farms). Table 3-3 summarizes the compensation that FDOT is proposing to mitigate for impacts to wildlife foraging habitat that is over and above what is statutorily required for wetland mitigation for the SR 7 Extension Project. Additional details regarding this table are provided in Section 3.5. Figure 3-2 provides a location map of the Rangeline sections.

For the remainder of this document, each section will be broken into three sub-sections to reflect the multi-faceted mitigation approach for each habitat impact type. These sub-sections will be: 1) Off-Site PROMAs; 2) On-Site Mitigation; and 3) Off-site Rangeline Preservation.

3.2 SITE SELECTION

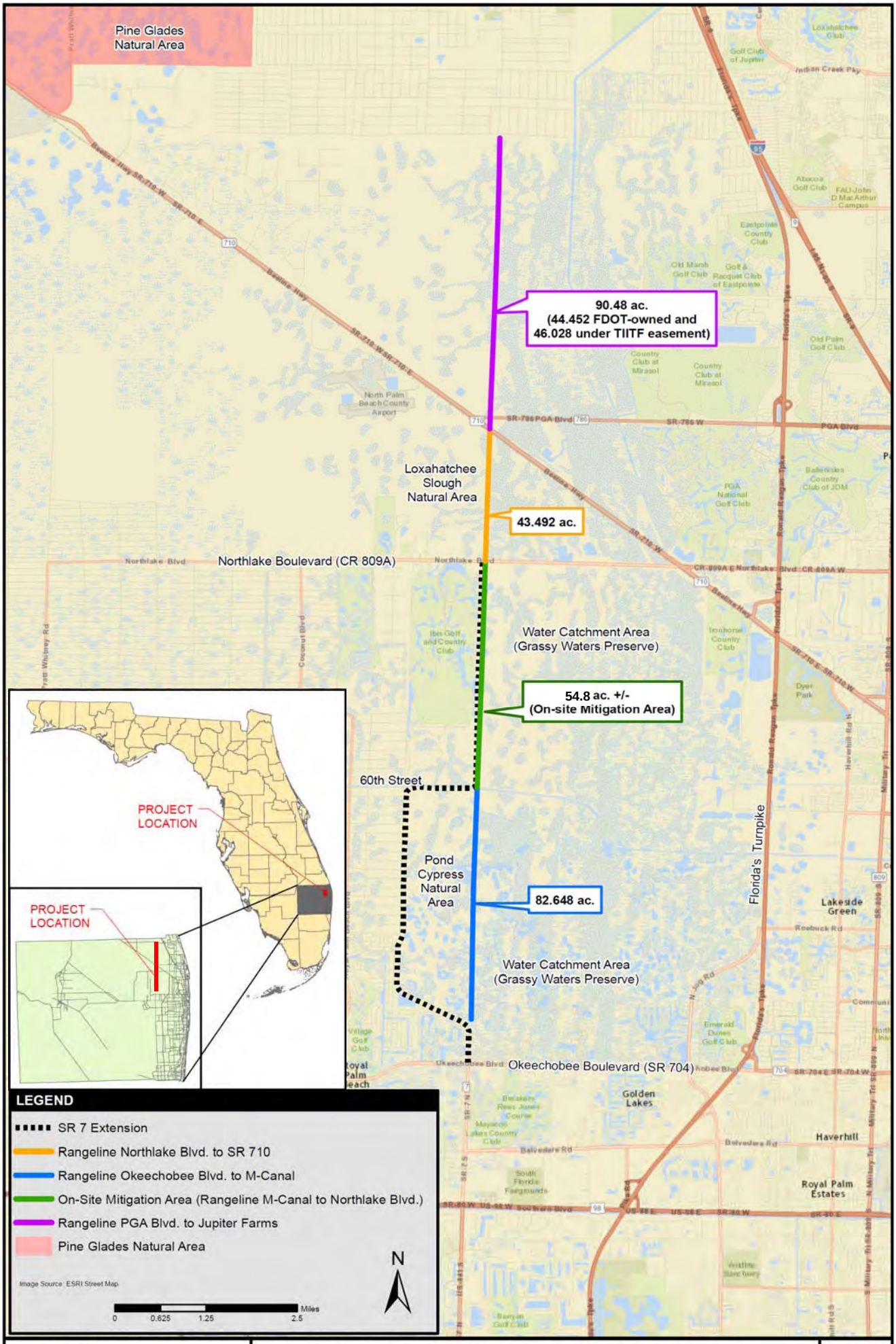
Off-Site PROMAs

Palm Beach County has instituted a regionally significant mitigation plan for wetland restoration within the Pine Glades West and Pine Glades North Mitigation Areas. Both sites were permitted by the State (West: ERP No. 50-08187-P; North: ERP No. 50-08231-P) and the USACE as Permittee Responsible Off-Site Mitigation Areas (PROMAs) (West Permit No.:SAJ-2011-02278; North: Permit No. SAJ-2007-04122). Both sites include extensive marsh wetlands, short and long hydroperiod wetlands, forested wetlands (hydric pine and cypress stands) and upland forests that provide foraging, roosting, nesting, feeding, and breeding habitat necessary for wetland-dependent wildlife and listed species such as the wood stork and snail kite. The restored habitat assemblages match those proposed for impact. Both sites have approved wood stork foraging habitat mitigation credits. As permitted, County projects resulting in wetland impacts can mitigate for unavoidable impacts through the allocation of wetland functional units at either Pine Glades site. The sites are only available for mitigation for County projects. Therefore all direct wetland impacts on County ROW within the SR 7 project corridor can be mitigated at Pine Glades, as well as all secondary impacts associated with the portion of the project located within County ROW. To the extent possible, allocated Pine Glades PROMA wetland functional units will also be used to mitigate wood stork impacts. Should additional wood stork mitigation be required to fully offset impacts, additional biomass credits will be set aside at Pine Glades.

The Pine Glades PROMA sites are located eight (8) miles northwest of the SR 7 Extension project corridor in northern Palm Beach County. It is well positioned to provide wood stork CFA mitigation, as it lies within the 18.6-mile radius of an active nesting colony affected by the proposed project (Figure 1-3). It is located within the Loxahatchee River watershed and the C-18 drainage sub-basin, both of which have their southern boundaries located along Northlake Blvd. and the Rangeline between Northlake Blvd. and SR 710

Table 3-3. Proposed Wildlife Habitat Mitigation Plan Summary

Species	Proposed Mitigation Strategy per Statutory Requirements		Additional Mitigation Proposed Above & Beyond Statutory Requirements	
	Site	Action	Site	Action
Wood Stork	Pine Glades PROMA	Purchase of 156.7 kg of long hydroperiod (Class 6) wood stork foraging habitat biomass credits to compensate for unavoidable impacts to core foraging habitat. 540.4 kg are currently available.	On-site: 54.8-acres of unused ROW between M-Canal & Northlake Blvd.	Wetland restoration and creation activities will create ideal wood stork foraging habitat.
Snail Kite	Pine Glades PROMA	Deduction of available herbaceous and forested wetland funtional units that are a result of previous wetland restoration activities. Wetland restoration activities in the PROMA increase foraging, perching/roosting, and nesting habitat, increasing potential for snail kite utilization.	Rangeline from Okeechobee Blvd to the M-Canal	As compensation for indirect impacts to snail kite foraging habitat surrounding the project corridor, FDOT is preserving 82.6 acres of pristine wetlands in perpetuity. An estimated 22 acres of wetlands within the rangeline have been enhanced in the past eight years providing better snail kite foraging and roosting/nesting habitat.
	Dupuis PROMA	Allocation of herbaceous wetland credits that are available as a result of previous wetland restoration activities. Wetland restoration activities increase potential for snail kite utilization.	Rangeline from Northlake Blvd to SR 710	As compensation for direct impacts to 11.5 acres of preferred snail kite foraging habitat and 39.6 acres of nesting/perching/roosting habitat, FDOT is preserving 43.5 acres of pristine wetlands in perpetuity. Conservation of this land will benefit snail kite proliferation/utilization in the long-term and ensure that no new roadway is connected to SR 710 in this location.
	On-site: 54.8 acres of unused ROW between M-Canal & Northlake Blvd.	Creation/Restoration of herbaceous marsh and forested wetland habitats which provide foraging, nesting, and roosting/perching habitat, increasing the potential for snail kite utilization.	Rangeline from PGA Blvd to Jupiter Farms	As additional compensation for direct impacts to 11.5 acres of preferred snail kite foraging habitat and 39.6 acres of nesting/perching/roosting habitat, FDOT is preserving an estimated 44.5 acres of pristine wetlands (not already preotected under conservation easement) in perpetuity. An estimated 10 acres of wetlands within the rangeline have been enhanced in the past eight years providing better snail kite foraging and roosting/nesting habitat.
General Wildlife	None	None	On-site	Wildlife crossings at the Ibis Mitigation Spillway and the M-Canal will be constructed to enhance wildlife connectivity. Fencing will be installed to reduce the potential for vehicle impacts on wildlife.
			On-site: 54.8 acres of unused ROW between M-Canal & Northlake Blvd.	Wetland habitat creation and enhancement activities will enhance wildlife utilization and foraging/roosting/nesting habitat. Creation of the Transitional Wetland areas will result in a habitat 'screen' (avian flight barrier) from the roadway, reducing the potential for vehicular strikes on avian species.



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LOCATION MAP
ON-SITE WETLAND MITIGATION AREA &
OFF-SITE RANGELINE PRESERVATION AREAS

Figure 3-2

(Figure 3-1), directly adjacent to the northern terminus of the project corridor. A bridge project along Northlake Blvd. was recently completed that re-established a hydrologic connection to wetland natural areas to the north and south. The stormwater associated with the proposed project will flow into Grassy Waters after it is sufficiently treated in the stormwater system. Therefore, because the project's stormwater outfalls into Grassy Waters and portions of Grassy Waters flow into the Loxahatchee River watershed and C-18 drainage sub-basin through the re-established connection under Northlake Blvd., Pine Glades is a viable mitigation option. In addition, its close proximity to the project corridor makes it an extremely attractive mitigation option.

Ecological 'lift' at both Pine Glades sites was calculated and permitted using UMAM. The Pine Glades North Mitigation Area currently has 66.28 functional units available. The Pine Glades West Mitigation Area has 57.67 functional units available (availability at both sites based on SFWMD-permitted ledger). The Pine Glades PROMA currently has 540.4 kg of long hydroperiod (Class 6 and 7) wood stork foraging habitat biomass 'credits' available. Pine Glade's federal permits require that wood stork foraging habitat mitigation credits be deducted from a separate ledger than wetland mitigation units, therefore reducing the likelihood of "double-dipping". Mitigation for the proposed project will be done at Pine Glades West Mitigation Area.

FDOT proposes to mitigate for direct and indirect wetland impacts at Pine Glades as well as mitigate impacts to wood stork foraging habitat. Mitigation for impacts to snail kite foraging, nesting, and roosting/perching habitat is being sought elsewhere, however, the snail kite benefits from the habitat restoration activities completed in the Pine Glades PROMA sites.

The Dupuis Reserve PROMA site was established through a Joint Project Agreement (JPA) between FDOT and SFWMD in which FDOT contributed funds to SFWMD for ecological restoration. SFWMD is responsible for the ownership and perpetual management of the Dupuis Reserve. The site is located approximately 20 miles northwest of the project corridor in southwest Martin County. Its service area includes all of Palm Beach County. It is located within the Loxahatchee River watershed. The SFWMD has completed activities necessary for the hydraulic and hydrologic restoration of flows, to the ecological benefit of various freshwater wetland habitat types including hydric pine flatwood, wet prairie, herbaceous marsh, shrub-scrub and cypress domes. The restored habitat assemblages match those proposed for impact. The USACE has allowed recent FDOT projects to deduct acreage credits from the Dupuis Reserve bank ledger based on acreage-based mitigation ratios. Originally 850 restoration acre-credits were established. The FDOT currently has approximately 567 acre-credits available (66 for forested wetlands and 501 for herbaceous marsh).

As listed in Table 3-2, the FDOT seeks to use Dupuis Reserve to offset direct impacts to existing exotic-dominated herbaceous marshes (FLUCFCS 6410B), vegetated ditches (FLUCFCS 5100), hydric pine (FLUCFCS 6250A&B) and shrub wetland habitat (FLUCFCS 6172), and all secondary impacts to herbaceous marsh habitat attributed to the portion of the project on FDOT ROW. No compensatory mitigation for wood stork foraging or snail kite nesting, foraging, and perching/roosting habitat is being sought at the Dupuis Reserve PROMA.

It should be noted that the Dupuis and Pine Glades PROMAs are the preferred off-site mitigation bank options, over private wetland mitigation banks, because the assemblages of wetland habitats in these PROMAs better match those in the project corridor. Bluefield Ranch and Treasure Coast mitigation banks do not have service areas that extend into Palm Beach County, are outside of the project's watershed and drainage sub-basin, and outside of the CFAs for the wood stork nesting colonies that affect the proposed project. R.G. Reserve was not permitted through USACE and therefore cannot offer federal mitigation credits. Loxahatchee Mitigation Bank (LMB) is outside of the project corridor's watershed and drainage sub-basin boundaries. However it is within the same wood stork CFA and has a service area that includes the SR 7 Extension project area. There is concern by the regulatory agencies that LMB does not provide the habitat complexity or similar assemblages of wetland habitats as those being impacted. LMB does not offer hydric pine habitat credits and it offers limited deep, relatively open water herbaceous marsh habitat suitable to offset impacts to snail kite foraging habitat.

Both Dupuis and Pine Glades are located outside of the Eastern Palm Beach County Cumulative Impact Basin. A cumulative impact assessment was conducted to demonstrate that an insignificant percentage of the basin's total wetland acreage and/or function will be lost when mitigation is proposed elsewhere and to validate the use of these PROMA sites as viable mitigation options that will not result in 'unacceptable' impacts. A copy of this cumulative impact assessment is provided in Appendix F.

On-Site Mitigation Area

The easternmost 170 feet (typical) of the FDOT-owned ROW between the M-Canal and Northlake Blvd., encompassing over 54.8 acres, is being set aside for wetland mitigation, which will be implemented in four phases: 1) wetland creation and restoration through the removal and scrape down of berms and backfilling of a ditch; 2) herbaceous and forested wetland restoration through the removal of dense exotic/nuisance vegetation and re-grading of the existing mixed-shrub wetland's ground level elevation; 3) wetland enhancement through eradication and control of exotic/nuisance species; and 4) preservation through placing the entire mitigation area under a conservation easement ensuring wetland proliferation in perpetuity.

Wetland Creation & Restoration

Approximately 9.3 acres of vegetated ditch habitat and 8.6 acres of upland berms occur within the unused portion of the ROW. Wetland creation is planned through the scrape down and removal of the berms, and wetland restoration through depositing the fill material into the adjacent vegetated ditch to restore historic wetland elevation. The target elevation shall match that of the respective forested wetlands and herbaceous marshes in the adjacent Grassy Waters Preserve. In addition to proposed canopy, shrub, and herbaceous layer plantings, the restored/created acreage would be allowed to recolonize naturally with desirable native vegetation such as spikerush, arrowhead, and pickerelweed. Mature tree plantings will be incorporated into the proposed forested wetland restoration/creation areas to aide in creating canopy coverage and reducing the time lag component of the 'lift' UMAM scoring.

An estimated 6.4 acres of exotic/nuisance-infested mixed-shrub wetland habitat (FLUCFCS 6172) occurs near the north end of the on-site mitigation area. Restoration of herbaceous marsh and forested wetland habitat is proposed in this area through removal of all existing undesirable vegetation, re-grading the existing topography to ensure that the target herbaceous and forested wetland elevations are sustainable in perpetuity, and planting native forest, shrub, and herbaceous layer wetland vegetation. The on-site mitigation site construction plans, which include all target elevations, fill quantities, and construction methodology, are provided in the Contract Plans, included with this permit application package.

The wetland creation/restoration activities will not only provide an ecological benefit, but will also benefit the functionality of the Grassy Waters Preserve as a source of, and filter for, the City of West Palm Beach's water supply. Removal of the upland berms and re-grading the mixed-shrub wetland habitat will increase the water storage capacity of Grassy Waters Preserve. By increasing wetland habitat, more water will be filtered through the wetland vegetation, providing water quality benefits to all water supply users.

Wetland Enhancement

Wetland enhancement via exotic/nuisance species eradication and control will be conducted in all existing wetland habitats located within the unused portion of the FDOT ROW. Enhancement provides an ecological benefit by reducing and eventually eliminating the exotic/nuisance vegetation seed source that is currently spreading into the Grassy Waters Preserve. Existing wetlands include approximately 28.4 acres of herbaceous marsh and forested wetland habitats that contain moderate to dense coverage (typically over 50 percent coverage) of invasive/exotic vegetation.

As summarized in Table 3-2, the on-site mitigation area is being designed to mitigate for direct impacts to native-dominated freshwater marsh habitat (FLUCFCS 6410A) and all secondary impacts to forested and shrub wetlands attributed to the portion of the project on FDOT ROW. No compensatory mitigation for wood stork foraging or snail kite nesting, foraging, and perching/roosting habitat is being sought through creation of the on-site mitigation area, however snail kites and wood storks will benefit from the proposed activities. Some of the added benefits to wood stork and snail kites include:

- wetland enhancement activities in the forested areas will improve the quality of nesting and perching/roosting habitat;
- increase the quantity of high quality wetland foraging habitat acreage through berm removal, ditch backfilling, other elevation re-grading activities;
- increase the quantity of potential nesting habitat in an area with known snail kite nests;
- removal of exotic seed source through removal of upland berm and enhancement activities;
- backfilling of the existing ditch increases water quality across entire site by eliminating stagnant water in ditch.

Off-Site Rangeline Preservation

The proposed impacts to 51.1 acres of snail kite foraging, nesting, and perching/roosting habitat will be mitigated through preservation and conservation of native wetland and upland habitats within three sections

of SR 7 Rangeline located outside of the project corridor: 1) Okeechobee Blvd. to M-Canal; 2) Northlake Blvd. to SR 710; and 3) SR 710 to Jupiter Farms (Figure 3-2).

Rangeline from Okeechobee Blvd. to the M-Canal

The SR 7 Rangeline located between Okeechobee Blvd. and the M-Canal spans approximately 3.4 miles and covers approximately 82.6 acres of predominantly wetland habitat. As depicted in Figure 3-2, it is situated between the County-owned and operated Pond Cypress Natural Area (to the west) and Grassy Waters Preserve (to the east; owned and operated by the City of West Palm Beach). The County has been conducting exotic/nuisance species eradication and maintenance activities in the Rangeline since 2008. Historically, thick concentrations of Melaleuca occurred in patches, both in and adjacent to the Rangeline. These Melaleuca-infested areas have since been treated, and maintained so that no area currently exhibits more than one percent coverage by exotic/nuisance species and can be considered relatively high quality habitat.

Wetland habitats in this section of Rangeline consist of an assemblage of forested wetlands intermixed with large expanses of relatively open herbaceous marsh, providing both foraging and roosting/nesting habitat for the snail kite. Hydroperiod is relatively longer (with greater water depths) on the east side of the Pond Cypress Natural Area, including the Rangeline area, where surface water flow is impeded by the upland berm and adjacent canal that separate Pond Cypress from the Grassy Waters Preserve. Snail kites were repeatedly documented utilizing (foraging and perching) wetland habitats within the Pond Cypress Natural Area during FDOT's 2014 nesting season survey. Therefore, this area can be considered appropriate compensation for impacts to snail kite habitat.

Rangeline from Northlake Blvd. to SR 710

Another portion of the SR 7 Rangeline spans approximately 1.9 miles from Northlake Blvd. north to SR 710 (Figure 3-2). This section of Rangeline encompasses an estimated 43.5 acres. Like the previous Rangeline section, a complex assemblage of herbaceous marsh, forested wetland, and pine flatwoods is currently present. Large, relatively open water marsh areas occur which is the preferred foraging habitat for snail kites. Preliminary investigations of the area have shown that exotic vegetation is very sparse (less than one percent cover) and the habitat and hydrology are ideal for snail kite utilization (foraging, nesting, and roosting/perching). The county has reported snail kite sightings in this area in the past.

Rangeline from PGA Blvd. to Jupiter Farms

An additional portion of the SR 7 Rangeline spans from PGA Blvd. north to 150th Court North in Jupiter Farms, a distance of approximately 3.95 miles (Figure 3-2). This section of Rangeline contains approximately 90.5 acres. Approximately 44.5 acres of this Rangeline segment is currently owned by FDOT; the other 46.0 acres is current under conservation easement. A complex assemblage of herbaceous marsh, forested wetland, and pine flatwoods are currently present in this area. Similar to the other Rangeline segments previously discussed, the County has been conducting exotic/nuisance species eradication and control on this ROW since 2008. Current exotic coverage is less than one percent, resulting in relatively high quality forested and marsh habitat. The water levels,

hydroperiod, and wetland habitat assemblages in this area are optimal for snail kite utilization and are ideal to mitigate for snail kite habitat impacts.

FDOT is not proposing to preserve/conserve the three Rangeline areas for compensatory wetland mitigation. Instead, FDOT is proposing to preserve/conserve these areas to mitigate for the direct and indirect impacts to snail kite foraging, nesting, and roosting/perching habitat associated with the SR 7 Extension project. Habitat conservation/preservation in the Rangelines between Northlake Blvd. and SR 710 and PGA Blvd. to 150th Court North in Jupiter Farms is proposed to mitigate for the 51.1 acres of direct impacts to snail kite habitat. Indirect impacts to snail kite habitat will be mitigated through the preservation/conservation of habitat within the Rangeline between Okeechobee Blvd. and the M-Canal.

3.3 SITE PROTECTION INSTRUMENT

Off-Site PROMAs

The two proposed PROMA sites, Pine Glades and Dupuis Reserve, are protected from development by existing conservation easements and are subject to ongoing/perpetual maintenance (including removal of exotic/invasive vegetation) as required by existing USACE and SFWMD permits.

On-Site Mitigation Area

The on-site wetland mitigation area within the swath of unused ROW, which totals an estimated 54.8 acres in the easternmost 170 feet (typical) of the corridor ROW between the M-Canal and Northlake Blvd., will be placed under a conservation easement following completion of all restoration and enhancement activities. The conservation easement serves two functions: 1) it ensures that the wetlands are preserved in a 'pristine' (high quality, minimal coverage by exotic/nuisance vegetation) state in perpetuity; and 2) provides assurance to the regulatory agencies that no future expansion or widening of this SR 7 corridor will occur. Third party rights will also be granted to the USFWS through a conservation easement. FDOT will monitor/maintain the on-site mitigation area in perpetuity.

Off-Site Rangeline Preservation

The FDOT agrees to make a commitment that construction of the project will not commence until the USFWS is granted third party rights over the three Rangeline properties identified for conservation and mitigation from north of Okeechobee Blvd. to the M-Canal and from Northlake Blvd. to Jupiter Farms. Further, the FDOT commits to transferring ownership of the three Rangelines to the County and establishing a management endowment fund of $1,579,720.00 to Palm Beach County ERM to cover the costs associated with the perpetual management of these Rangeline mitigation properties. The funds will be placed in an escrow account during construction. Conservation easements will be placed over the Rangelines after the ownership transfer is completed. This will preserve the habitat in perpetuity and ensure that no future roadways are built in these Rangeline segments. All this is included in the Joint Participation Agreement between FDOT and the County that is currently being developed.

3.4 BASELINE INFORMATION

Descriptions of the proposed wetland impact areas and the wetland and surface water habitat types were provided previously in the Section 1.2 of this document.

Off-Site PROMAs

Brief descriptions of the habitats restored in the Pine Glades and Dupuis Reserve PROMAs are provided in Section 3.2 of this document. More detailed information regarding the wetland habitats at these sites is available in each site's USACE and SFWMD permits.

On-Site Mitigation Area

Descriptions of the existing wetland habitats occurring in the proposed on-site mitigation area are provided in Section 3.2 of this document and in the 'lift' UMAM sheets provided in Appendix G. The on-site mitigation construction plans (see Contract Plans included with this permit application package) provide information on where wetland restoration, creation, and enhancement activities are proposed.

Off-Site Rangeline Preservation

Descriptions of the existing habitats occurring in the three proposed Rangeline preservation/conservation areas are provided in Section 3.2 of this document.

3.5 DETERMINATION OF CREDITS

The proposed compensatory mitigation will offset (and generally exceed) the functional impacts to wetland and surface waters, including impacts to wood stork core foraging habitat and snail kite foraging/nesting/roosting habitat, associated with the SR 7 Extension project. All proposed wetland impacts will be permanent in nature. No temporary wetland impacts related to the roadway construction are proposed therefore no compensatory mitigation for temporary impacts is anticipated. It is assumed that wetlands in the 300-ft secondary impact buffer will retain their existing vegetative structure after construction, and mitigation is proposed to address expected slight reductions in their ecological function (e.g., wildlife habitat and usage). Secondary impact Functional Loss to wetlands located in the on-site mitigation area are being calculated no differently than other wetlands, despite the fact that proposed restoration/creation/enhancement activities will increase the functionality of these wetlands. Additionally, secondary impact Functional Loss to wetlands adjacent to the existing portion of SR 7 between Northlake Blvd. and the Ibis County Club entrance are being calculated no differently than other wetlands. Direct and indirect impacts to snail kite habitat are being mitigated separate from wetlands; over and above what is statutorily required.

Table 3-2 summarizes the proposed wetland mitigation plan for the SR 7 Extension Project. Key elements are described below. Impact UMAM sheets are provided in Appendix D. Functional Lift UMAM sheets for the on-site mitigation area are provided in Appendix G.

- The estimated 11.0 acres of direct herbaceous wetland impacts and 29.6 acres of direct forested wetland impacts located within the County ROW will be mitigated at the Pine Glades PROMA;
- The estimated 14.0 units of Functional Loss resulting from secondary impacts attributed to proposed construction within the County-owned ROW will be mitigated at the Pine Glades PROMA;
- The estimated 5.2 acres of direct impacts to exotic-dominated marsh habitat (FLUCFCS 6410B) and vegetated ditches (FLUCFCS 5100) located within the FDOT ROW will be mitigated at the Dupuis Reserve PROMA through the allocation of 20.6 acre credits;
- The estimated 23.1 acres of secondary herbaceous marsh attributed to proposed construction within the FDOT ROW will be mitigated at the Dupuis Reserve PROMA through the allocation of 6.4 acre credits;
- The estimated 1.7 acres of direct impacts to native-dominated marsh habitat (FLUCFCS 6410A) within FDOT ROW will be mitigated through on-site mitigation via herbaceous marsh restoration, creation, enhancement, and preservation within the easternmost 54.8 acres of un-used FDOT ROW between the M-Canal and Northlake Blvd.;
- The estimated 10.3 acres of direct impacts to hydric pine habitat (FLUCFCS 6250) and exotic-dominated shrub wetland habitat (FLUCFCS 6172) within the FDOT ROW will be mitigated at the Dupuis Reserve PROMA through the allocation of 41.1 acre credits; and
- The estimated 3.4 units of Functional Loss resulting from secondary impacts attributed to proposed construction within the FDOT ROW will be mitigated through on-site mitigation via forested wetland restoration, creation, enhancement, and preservation within the easternmost 54.8 acres of un-used FDOT ROW between the M-Canal and Northlake Blvd.

Proposed wetland impacts as they relate to the wood stork have been analyzed using the USFWS compensatory biomass calculator tool. It has been determined that credits equaling 156.7 kg of biomass within longer hydroperiod wetlands (Class 6 and 7) will be required to adequately offset these impacts (Appendix E). Impacts to all wood stork foraging habitat will be mitigated at the Pine Glades PROMA which currently has 540.4 kg of long hydroperiod (Class 6 and 7) wood stork biomass credits available. Therefore, the Pine Glades PROMA site has more than enough wood stork foraging biomass credits to meet the needs of this project. In addition, the restored wetland habitat at the Pine Glades PROMA is ideal for wood stork foraging. The site contains many deep water features with shallow-sloped banks, which is the wood stork's preferred foraging habitat. County biologists commonly report sightings of wood storks utilizing the Pine Glades site. To the extent possible, allocated wetland functional units at Pine Glades will also be used to mitigate wood stork impacts. Should additional wood stork mitigation be required to fully offset impacts, additional credits will be set aside at Pine Glades.

Off-Site PROMAs

Both the Pine Glades and DuPuis Reserve PROMAs are outside of the SR 7 Extension project cumulative impact basin. A cumulative impact analysis was conducted for the proposed use of Pine Glades to mitigate for the direct and secondary wetland impacts associated with the portion of the project on County ROW and

Dupuis Reserve to mitigate for direct and secondary wetland impacts on FDOT-owned ROW (See Appendix F). Based on this assessment, an insignificant percentage (less than 0.14%) of the basin's total wetland acreage and/or function will be lost due to mitigation being proposed outside of basin; creating no 'unacceptable' cumulative wetland impacts within the bsin. This validates the use of these PROMA sites as viable mitigation options.

The Pine Glades PROMA was permitted using UMAM. The impacts resulting from the proposed SR 7 Extension project were assessed using UMAM. Therefore, wetland mitigation functional unit allocation can be deducted at a 1:1 ratio (Table 3-2). Forested and herbaceous wetland functional unit availability at Pine Glades exceeds what is required for this project. The proposed impacts to wood stork foraging biomass were assessed using the USFWS compensatory biomass calculator tool. This tool was also used to assess foraging biomass availability at Pine Glades; allowing wood stork foraging biomass credits to be allocated at a 1:1 ratio. Biomass credit availability at Pine Glades exceeds what is needed for this project.

Wetland acre-credit allocation at the Dupuis Reserve PROMA site is assessed based on acreage-based mitigation ratios. USACE and SFWMD previously permitted other FDOT projects, such as the Indian Street Bridge in Martin County (FPID No. 230978-1-52-01), using the following impact to mitigation acreage ratios:

- Direct Wetland Impacts – 4:1
- Secondary Wetland Impacts in 0-50 foot buffer – 0.5:1
- Secondary Wetland Impacts in buffer beyond 50 feet – 0.25:1

These same ratio classifications were applied to the direct and secondary impacts resulting from the proposed SR 7 Extension project (Table 3-2). Forested and herbaceous wetland acre-credit availability at Dupuis far exceeds what is required for this project.

On-Site Mitigation Area

The ecological 'lift' resulting from the proposed on-site wetland restoration, creation, and enhancement activities was calculated using UMAM. The UMAM sheets are provided in Appendix G. Table 3-4 provides a summary of the proposed 'lift' resulting from each of these activities. The 'current' scores used to calculate UMAM delta for each habitat type in Table 3-4 match the agency approved direct impact 'current' scores for the impacted habitat types (where applicable). The 'current' scores for the upland berm habitats (FLUCFCS 7430) were established at zero because these are uplands that provide minimal ecological function. The berms are infested with invasive/exotic species, inhibit surface water flow, and provide a barrier to wildlife access/utilization of surrounding wetlands. The target, post-construction UMAM "with' scores were established to match the "with" scores of the native-dominated habitats occurring in Grassy Waters Preserve. The time lag values were established as follows:

- Habitats proposed for wetland enhancement (via exotic eradication and control activities) were given a time lag (t-factor) of 1.07, equivalent to three years. It is anticipated that given the density of exotic/nuisance vegetation occurring in these areas, three years will be sufficient for natural colonization of native wetland vegetation to occur to fulfill the permitted native coverage success criteria.
- Proposed herbaceous marsh restoration and creation activities resulting from ditch backfill, berm removal, and re-grading of the existing mixed-shrub wetland habitat were given a t-factor of 1.14,

equivalent to five years. It is anticipated that five years will be sufficient to achieve the permitted vegetation coverage criteria given the proposed planting activities and anticipated rate of natural vegetation colonization.

- Proposed forested wetland restoration and creation activities resulting from ditch backfill, berm removal, and re-grading of the existing mixed-shrub wetland habitat were given a t-factor of 1.46, equivalent to 11-15 years. It is anticipated that a forested system with sufficient canopy coverage to fulfill the permitted native coverage success criteria will be achieved within 15 years given the additional planting of shrub and canopy layers, and natural colonization from surrounding wetlands. It should be noted that mature tree canopy specimens (15 gallon bald cypress) will be planted immediately adjacent to the LOC (which is upland) to aid in achieving the permitted canopy coverage criteria. The wetland transitional areas, which will form the western edge of the on-site mitigation area, are designed to be slightly elevated (to tie into the berm elevation) and therefore have relatively lower functionality and wetland vegetation coverage/diversity compared to the other restored/created forested wetland areas.

All proposed wetland restoration and creation areas were assigned a risk factor of 2.0, given that the establishment of accurate and successful wetland target elevations can sometimes be difficult. However, because surface water levels are controlled in Grassy Waters and relatively easy to measure and the proposed restoration/creation areas are not dependent on ground water for hydrology, the risk factor was limited to 2.0. There is reduced risk with the proposed exotic/invasive species eradication and control activities, therefore all proposed enhancement areas received a risk factor of 1.5. The UMAM sheets provided in Appendix G provide additional details on the proposed UMAM 'lift' scoring. All proposed 'lift' UMAM scores were discussed post permit application submittal and preliminarily approved by SFWMD in May 2015.

Off-Site Rangeline Preservation

FDOT is committed to providing compensatory mitigation for all project related impacts. FDOT is proposing compensatory mitigation for direct and indirect snail kite foraging, nesting, and roosting/perching habitat impacts separate from, and in addition to, its proposed wetland mitigation plan. Currently, there are no state or federal statutes defining protocols to mitigate for impacts specifically to snail kite foraging, nesting, and roosting/perching habitat. FDOT is proposing to conserve/preserve over 216 acres of ideal forested upland, marsh, and forested wetland habitat located in the three off-site Rangeline segments, that are currently not under conservation easement, to compensate for the direct and indirect snail kite habitat impacts associated with the SR 7 Extension project. As summarized in Table 3-3, the conservation/preservation acreages for each Rangeline section is as follows:

- As compensation for direct impacts to 11.5 acres of preferred snail kite foraging habitat and 39.6 acres of nesting/perching/roosting habitat, a total of approximately 88 acres of similar habitat will be preserved in the Rangeline sections from Northlake Blvd. to SR 710 (43.5 acres) and the areas currently not under conservation easement in the Rangeline between PGA Blvd and Jupiter Farms (44.5 acres). This represents over a 1.7 to 1 preservation acreage to direct impact acreage ratio.

TABLE 3-4. Ecological "Lift" Created through On-site Restoration/Creation/Enhancement Activities.

Existing Habitat Type	Existing NWI Classification	Existing FLUCFCS Code	Proposed Activity	Proposed FLUCFCS Code	Total Acres	Location and Landscape Support		Water Environment		Community Structure		Delta	Time Lag*	Risk**	Relative Functional Gain ("Lift")
						Current		Current	With	Current	With				
Vegetated Ditches	PABHx	5100	Forested Wetland Restoration	6300	9.03	7	7	7	7	7	8	0.03	1.46	2.0	0.10
Exotic-Dominated Shrub Wetland	PSS1	6172	Forested Wetland Restoration	6300	1.91	5	7	5	7	4	8	0.27	1.46	2.0	0.17
Upland Berms	U	7430	Forested Wetland Creation	6300	8.39	0	7	0	7	0	8	0.73	1.46	2.0	2.11
Vegetated Ditches	PABHx	5100	Herbaceous Wetland Restoration	6410A	0.07	7	7	7	7	7	8	0.03	1.14	2.0	0.001
Exotic-Dominated Shrub Wetland	PSS1	6172	Herbaceous Wetland Restoration	6410A	3.99	5	7	5	7	4	8	0.27	1.14	2.0	0.47
Upland Berms	U	7430	Herbaceous Wetland Creation	6410A	0.23	0	7	0	7	0	8	0.73	1.14	2.0	0.08
Hydric Pine	PFO3	6250	Enhancement via exotic control	6250A	16.83	7	7	6	7	6	8	0.10	1.07	1.5	1.05
Freshwater Marsh	PEM1	6410	Enhancement via exotic control	6410A	11.53	7	7	6	7	6	8	0.10	1.07	1.5	0.72
Pine Flatwoods	U	4110	Enhancement via exotic control	4110	1.74	7	7	7	7	8	8	0.00	N/A	N/A	0.00
Vegetated Ditches	PABHx	5100	Creation of Transitional Areas	6300	1.04	7	7	7	7	7	8	0.03	1.46	2.0	0.01
Total					**54.76**										**4.71**

* = For Time Lag: 1.46 = 11-15 years; 1.14 = 5 years; 1.07 = 3 years

** = For Risk: Enhancement activities assigned a risk factor of 1.5, activities involving earthwork (backfilling/scrape down) were assigned a risk factor of 2.

LIFT SUMMARY

Habitat Type	Relative Functional Gain ("Lift")
Herbaceous	1.27
Forested	3.44
Total	**4.71**

- As compensation for indirect impacts to snail kite foraging, nesting, and perching/roosting habitat surrounding the project corridor, a total of 82.6 acres of similar habitat will be preserved in the Rangeline section from Okeechobee Blvd. to the M-Canal.

A conceptual mitigation plan highlighting this proposed action was reviewed and conceptually approved by USFWS in November 2014. The USFWS Biological Opinion referencing this approval is provided in Appendix H.

3.6 MITIGATION WORK PLAN

Off-Site PROMAs

This section is not applicable for the use of off-site PROMAs.

On-Site Mitigation Area

Detailed construction plans for the on-site wetland mitigation area are provided in the Contract Plans, included with this permit application package. The roadway contractor will be responsible for all earthwork associated with the on-site wetland creation and restoration activities. Following completion of all earthwork, a separate contractor under contract with FDOT's district-wide mitigation contract will conduct the planting, exotic/nuisance species eradication efforts, and routine exotic/nuisance species maintenance activities. Detailed Construction Sequence Plans have also been prepared as part of the Contract Plans. A summary of the sequence of construction activities shown in the plan-set is as follows:

1. Install erosion and turbidity control measures prior to the beginning of any restoration activities. These measures shall include double-staked turbidity barrier directly adjacent to and east of the existing upland berm and surrounding the wetland restoration areas in the existing mixed-shrub wetland. Soil tracking mats shall be placed at the location of construction equipment ingress/regress.
2. Standard clearing and grubbing of wetland restoration/creation areas.
3. Perform ditch backfill, berm excavation, and site grading.
4. Disk/scarify any compacted substrate areas to enhance native vegetation recruitment.
5. Site planting.
6. Site cleanup as needed.
7. Removal of erosion/turbidity control devices.

Construction equipment can vary depending on the contractor. Since both large-scale and detailed excavation and grading will be required, a variety of equipment will be needed, potentially including, but not limited to, the following:

- Long-arm excavators, front-end loaders, bulldozers, dump trucks, Grade-alls (for larger excavation/grading areas).
- Hand/shovel, Bobcats and/or small-arm excavators (for detailed excavation/grading areas).

Best Management Practices (BMPs) for installation and maintenance of perimeter erosion control devices will be implemented. Control of erosion from the roadside slope will be protected by the perimeter devices

during construction and stabilization of the roadside slope as phased construction progresses. The Preserve side of the mitigation construction will also be protected by the perimeter erosion control devices during construction and by the stabilization of the restoration/mitigation creation area by the establishment and coalescence of the ground cover strata plant installations. Within the on-site mitigation area, maximum slopes are 4:1 and these are limited to the transitional zone. Slopes within the other restoration or creation habitat types are significantly flatter and should not result in erosion impacts. See the Erosion Control Plans for further details including the locations of all erosion/turbidity control devices.

In order to further eliminate and reduce potential adverse impacts to water quality and surrounding wetlands and surface waters, the following Environmental Notes are included in the Contract Plans:

- North of the M-Canal crossing, the contractor shall maintain the existing berm in the wetland creation areas to serve as a natural buffer between the wetlands and earthwork activities. The existing berm shall remain in place until all other roadway earthwork is completed. In the areas where a berm is not present the contractor has the option to provide a temporary berm or construct the proposed drainage berm.
- From 60th street to the M-canal crossing the contractor shall construct the proposed drainage berm to reduce potential impacts to adjacent wetland natural areas. Staked turbidity barrier shall be placed adjacent to right-of-way.
- Wetlands occur on both sides of the corridor, within the project right-of-way, and beyond. The contractor will coordinate selection and review of any staging or stockpiling areas with the District Construction Environmental Coordinator (DCEC) at (954) 777-4665. The contractor is prohibited from staging of materials, vehicles, or equipment at the following locations:
  1) within or adjacent to wetland and/or surface waters, except where specifically permitted by the U.S. Army Corps of Engineers and the South Florida Water Management District (SFWMD).
  2) within or adjacent to public lands or conservation easements (Grassy Waters Preserve, Pond Cypress Natural Area, or the Ibis Mitigation Area).
- Any material to be stockpiled for periods greater than 24 hours shall be protected by appropriate erosion control devices.
- Contractor shall avoid any wetlands beyond the standard clearing and grubbing limits and/or limits of construction depicted on the planting details.
- During any construction activity, absolutely zero encroachment is permitted beyond the limits of standard clearing and grubbing depicted in the planting details.
- Contractor shall submit a detailed construction sequencing plan that includes site access areas to SFWMD for review a minimum of 30 days prior to construction commencement.
- The Pond Cypress Natural Area, Grassy Waters Preserve, and Ibis Preserve are protected under a conservation easement. No impacts or encroachments into these areas shall be permitted.

- Construction equipment shall be pressure washed prior to entering the site to avoid spreading exotic and invasive weed species.
- Construction equipment shall be pressure washed upon leaving the site each day to avoid sediment runoff into adjacent water bodies.
- No discharges into Pond Cypress Natural Area, M-Canal, Grassy Waters Preserve, or Ibis Preserve are allowed.

Off-Site Rangeline Preservation

No construction is proposed in the three Rangeline sections. FDOT does not propose to conduct any habitat restoration or creation activities in these areas. The habitats in these areas will be preserved under a conservation easement and undergo routine exotic maintenance/control efforts to ensure high functionality in perpetuity.

3.7 MAINTENANCE PLAN

Off-Site PROMAs

Any monitoring and maintenance of the off-site PROMAs are the responsibility of the owning/operating entities.

On-Site Mitigation Area

Following the completion of the grading activities and verification that the mitigation area has been constructed in accordance with the Contract Plans, a pre-planting maintenance event will be conducted to clear undesirable vegetation from the planting areas. The proposed planting plan will be installed within one week following the pre-planting maintenance event. Following installation of the planting material the plants will be thoroughly watered (if not inundated) and followed with additional watering events, as necessary. The mitigation area will be maintained by a Florida licensed Natural Areas herbicide applicator on a quarterly schedule for the first two years, and then it will be treated on a semi-annual basis thereafter until released from monitoring requirements or as the permit conditions warrant.

Exotic species maintenance/control activities will include leave in-place 'notch and spray treatment' of large trees and hand-pulling and selective herbicide applications for herbaceous and shrub layer vegetation. Exotic vegetation shall be limited to less than 5 percent of total cover. Exotic species will be controlled should they appear within the mitigation site. Exotic treatment shall only be removal by hand or use of an approved herbicide. Care will be taken to ensure that desirable vegetation is not harmed or accidentally removed. Invasive species will not constitute more than 5 percent areal coverage of the forested and herbaceous vegetative community. If this goal is exceeded, measures will be taken to eradicate the invasive species.

FDOT will be responsible for all exotic vegetation maintenance events in the on-site mitigation area in perpetuity. No more than 5 percent coverage by exotic/invasive vegetation will be allowed in the long-term, in compliance with permit success criteria.

Off-Site Rangeline Preservation

The County has been conducting routine exotic control/maintenance events within the three Rangeline sections and in the surrounding natural areas since 2008. The routine events occur at least annually, and typically more frequently (i.e. quarterly or semi-annually) depending on the results of 'spot checks'. To date the maintenance activities have resulted in exotic vegetation coverage being less than one percent. The County will continue to conduct routine (annually, at minimum) maintenance events once it takes ownership of the three Rangeline sections.

3.8 PERFORMANCE STANDARDS

Off-Site PROMAs

This section is not applicable for the use of off-site PROMAs.

On-Site Mitigation Area

The on-site wetland restoration, creation, and enhancement areas will be considered successful when the following criteria have been consistently met for at least one year without intervention in the form of irrigation, removal of undesirable vegetation, or replanting of desirable vegetation:

1) The mitigation areas can be reasonably expected to develop into Palustrine Forested Wetland (PFO) and Palustrine Emergent Marsh (PEM1), as determined by the United States Fish and Wildlife Service Classification of Wetlands and Deepwater Habitats of the United States.
2) Topography, water depth, and water level fluctuations in the mitigation areas are characteristic of the wetland/surface water type specified in criterion "1".
3) The wetland mitigation areas can be determined to be a wetland or other surface water according to Chapter 62-340, Florida Administrative Code.
4) At least 80 percent cover by appropriate wetland species (i.e., FAC or wetter) after five (5) years.
5) At least 30 percent canopy coverage by desirable wetland tree species.
6) Cover of Category I and II invasive exotic plant species, pursuant to the most current list established by the Florida Exotic Pest Plant Council (FLEPPC) at http://www.fleppc.org, and the nuisance species, common reed (*Phragmites australis*), dog fennel (*Eupatorium capillifolium*), and cattail (*Typha* spp.) shall not exceed five (5) percent.

Off-Site Rangeline Preservation

Coverage by exotic/nuisance vegetation shall not exceed 5 percent in any of the habitats within the three proposed Rangeline preservation/conservation areas, in perpetuity.

3.9 MONITORING REQUIREMENTS

Off-Site PROMAs

Any monitoring and maintenance of the off-site PROMAs are the responsibility of the owning/operating entities.

On-Site Mitigation Area

The monitoring will consist of pre-development baseline monitoring, construction monitoring, and a Five-Year Monitoring Program. FDOT will be responsible for all monitoring requirements.

A baseline monitoring event will be conducted prior to any construction activities commencing within the mitigation work limits. The goal of the baseline monitoring is to document the current degraded conditions of the wetlands to be enhanced/restored and uplands proposed for wetland creation; and facilitate the tracking of the restoration program. Baseline monitoring will be conducted after permits are obtained and prior to earthwork activities.

During the course of the mitigation construction activities, the project biologists will periodically inspect the wetland mitigation area. Inspections will begin when the mitigation area is being field staked and will continue through the completion of construction/restoration project. Evaluation of work in progress and potential problems will be documented in field notes; copies will be maintained in FDOT and contractor project files. Immediate corrective actions will be implemented.

Upon determination that the mitigation area has been constructed and planted correctly, a monitoring event will be conducted within 60 days to fulfill the Time Zero Monitoring Report requirements per SFWMD and USACE's permit conditions, respectively. The formal mitigation monitoring program will be initiated upon each agency's review and approval of the Time Zero Monitoring report. The report will include as-built drawings of all completed wetland restoration and creation areas.

The goal of the monitoring program is to track the progress of the wetland restoration and creation towards meeting the project's permitted success criteria. Accurate and repeatable monitoring is needed to identify trends, respond to problematic situations, and to demonstrate the eventual success of the mitigation project. The monitoring methodologies applied shall be consistent for both the baseline monitoring and Five-Year monitoring program.

Monitoring transects shall be located every 500 feet coinciding with the roadway stationing. Linear transects shall extend from the upper edge of the Transitional Wetland Restoration zone, or gravity wall, to the outer edge of the mitigation area. Photostations shall be located at the terminus of each transect nearest to the roadway. Since Grassy Waters Preserve is one contiguous water basin, a single staff gauge shall be located at the edge of the preservation zone at a central located transect. The Contract Plans depict the locations of the proposed monitoring transects, photostations, and staff gauge, as well as detailed specifications of the proposed staff gauge.

Monitoring methods will document that each target community will resemble representative communities with respect to plant community structure and species composition. The initial monitoring event will establish the fixed belt transects to provide representative quantitative results of tree heights and canopy

widths for all of the individual tree species within the transect and coverage estimates (using a one square meter quadrats at a minimum of three locations along the transect) for the herbaceous zone. These results will then be used to generate the average tree height, canopy coverage, herbaceous coverage, and species density along each transect and may also be combined and weighted (based on transect length/area) with other transects to provide an overall representative estimation of the coverage, by zonation (canopy, shrub, herbaceous) of the mitigation area. Water elevation at the time of monitoring will be recorded from staff gauge readings to provide a snapshot of the site's hydrological conditions. Additionally, general notes will be recorded on the average water depths and soil moisture conditions. Representative color photographs will be taken from the permanent photostations and presented in all subsequent monitoring reports. Qualitative estimations of the following parameters will also be collected along each transect:

- species survivorship estimations;
- herbaceous and shrub layer composition and percent cover of planted and recruited native vegetative species;
- herbaceous and shrub layer composition and percent cover of recruited nuisance and exotic vegetative species;
- observations of listed species and/or their nests; and
- other incidental wildlife observations.

The wetland mitigation area will be monitored on a semi-annual basis for the first three years and annually thereafter, with annual monitoring reports to follow within 30 days of the last monitoring event. In general, the semi-annual monitoring events will be conducted in the spring and fall of each year, and annual monitoring events will be conducted in the early Fall of each year. The purpose of the monitoring will be to evaluate the success of the mitigation sites in accordance with the permitted success criteria.

Utilizing the monitoring protocol described above, an annual monitoring report will be submitted to the SFWMD and USACE. The reports will include:

- Maps showing the transect and photostation locations;
- Transect sampling results;
- A list of species and their percent cover for each community and estimated percent survival of planted species;
- A list of protected species and maps depicting the locations of any nest sites that were observed;
- Summary of the results compared to permit success criteria and prior sampling results;
- Evaluation of the success of the maintenance efforts to date; and
- Recommendations for any remedial actions that may be necessary to ensure the success of the mitigation area.

If the site fulfills all permit success criteria after five (5) years, no additional monitoring is proposed. If the site fails to meets the permitted success criteria, additional annual monitoring will be conducted by FDOT at a frequency that will be coordinated with SFWMD and USACE.

Off-Site Rangeline Preservation

Currently, aerial coverage by exotic/nuisance vegetation in each of the three Rangeline sections is less than one percent. The County will continue its maintenance/control events to ensure that exotic coverage does not exceed five (5) percent. Because no wetland creation/restoration work is proposed in the off-site Rangelines and because these areas are currently fulfilling the proposed exotic vegetation success criteria, no additional monitoring is proposed.

3.10 LONG-TERM MANAGEMENT PLAN

Off-Site PROMAs

This section is not applicable for the use of off-site PROMAs.

On-Site Mitigation Area

FDOT shall be responsible for the management of the on-site mitigation area in perpetuity.

Off-Site Rangeline Preservation

For all three Rangeline sections, the FDOT will transfer ownership to the County. A Joint Participation Agreement is currently being developed between FDOT and the County to establish site-specific management funds to ensure the perpetual maintenance and preservation of the lands (as described in Section 3.3). The County currently has approved management plans for many of its existing natural areas. As an example, the management plan for the Pond Cypress Natural Area is provided in Appendix I. New plans that will be based on the existing management plans will either be drafted for the Rangeline areas or, in the case of Pond Cypress, the approved management plan will likely be amended to include the Rangeline section between Okeechobee Blvd. and the M-Canal.

3.11 ADAPTIVE MANAGEMENT PLAN

Off-Site PROMAs

This section is not applicable for the use of off-site PROMAs.

On-Site Mitigation Area

In the event that any of the success criteria listed in Section 3.8 are not achieved after the end of the five (5) year monitoring period, the FDOT will consult with SFWMD, USACE, and USFWS to determine the best remediation actions. Such actions could include, but are not limited to, additional plantings, increased frequency of maintenance events, or additional earthwork if the as-built wetland restoration and/or creation elevations need to be lowered or raised to achieve better vegetation coverage. In the event that the permitted success criteria are not met in the long-term, the FDOT will conduct the necessary remediation actions to ensure that the site remains in compliance. FDOT will inform SFWMD, USACE, and USFWS of any remediation efforts taken and the results of these efforts.

Off-Site Rangeline Preservation

In the event that coverage by exotic/nuisance exceeds the 5 percent coverage criteria in the future, the County will conduct additional control/maintenance events and/or increase the frequency of the maintenance events until exotic/nuisance species coverage across the entirety of the three Rangeline segments falls below 5 percent coverage.

3.12 FINANCIAL ASSURANCES

Off-Site PROMAs

The financial responsibility for the perpetual monitoring and maintenance of the off-site PROMAs will be the responsibility of the owning/operating entities.

On-Site Mitigation Area

FDOT will be responsible for all management and maintenance costs associated with the on-site wetland mitigation area in perpetuity.

Off-Site Rangeline Preservation

FDOT will establish a management endowment fund of $1,579,720.00 to Palm Beach County ERM to cover the costs associated with the long-term management of the Rangeline preservation areas. The funds will be placed in an escrow account during construction.